School of Psychology and Speech Pathology

A Randomised Controlled Trial of Group Cognitive Behavioural Therapy for Clinical Perfectionism

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DECLARATION

To the best of my knowledge and belief, this thesis contains no material previously published by any other person except where due acknowledgement has been made. This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Signed:

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LIST OF ABBREVIATIONS

APA:	American Psychiatric Association;
APS:	Australian Psychological Society;
APSR:	Almost Perfect Scale-Revised;
ASI-3:	Anxiety Sensitivity Index Version 3;
BDI:	Beck Depression Inventory;
BDI-II:	Beck Depression Inventory-II;
BMI:	Body mass index;
CBT:	Cognitive behaviour therapy;
CBT-CP:	Cognitive behaviour therapy for clinical perfectionism;
CBT-E:	Enhanced cognitive behaviour therapy;
CM:	Concern over Mistakes;
CM+DA:	Combined subscales of Concern over Mistakes and Doubts about Actions;
CONSORT:	Consolidated Standards of Reporting Trials;
CPE:	Clinical Perfectionism Examination;
CPQ:	Clinical Perfectionism Questionnaire;
CSPRS-6:	Collaborative Study Psychotherapy Rating Scale-6;
DA:	Doubts about Actions;
DASS-21:	Depression, Anxiety and Stress Scale-21;
DASS-anxiety:	The anxiety subscale of the Depression, Anxiety and Stress Scale-21;
DAS-SC:	Perfectionism subscale of the Dysfunctional Attitudes Scale;
DASS-dep:	Depression subscale of the Depression, Anxiety and Stress Scale-21;

DASS-stress:	Stress subscale of the Depression, Anxiety and Stress Scale-21;
DEQ:	Depressive Experiences Questionnaire;
DSM-IV-TR:	Diagnostic and Statistical Manual of Mental Disorders, 4th edition, text revision;
DSM-5:	Diagnostic and Statistical Manual of Mental Disorders, 5th edition;
EDE-Q:	Eating Disorders Examination Questionnaire;
EDEQ-ec:	Eating Concerns subscale of the Eating Disorder Examination Questionnaire;
EDEQ-res:	Restraint subscale of the Eating Disorder Examination Questionnaire;
EDEQ-sc:	Shape Concerns subscale of the Eating Disorder Examination Questionnaire;
EDEQ-total:	Total score on the Eating Disorder Examination Questionnaire;
EDEQ-wc:	Weight Concerns subscale of the Eating Disorder Examination Questionnaire;
EDI:	Eating Disorders Inventory;
EDI-P:	Perfectionism subscale of the Eating Disorders Inventory;
EDNOS:	Eating disorder not otherwise specified;
FMPS:	Frost Multidimensional Perfectionism Scale;
FNE-B:	Fear of Negative Evaluation Scale-Brief Version;
GAD:	Generalised anxiety disorder;
GLMM:	Generalised Linear Mixed Model;
Group CBT-CP:	Group cognitive-behavioural therapy for clinical perfectionism;
HMPS:	Hewitt and Flett Multidimensional Perfectionism Scale;
IBS:	Irritable bowel syndrome;

ICC:	Intra-class correlation;
LSD:	Least significant difference;
M:	Mean;
MEC:	Maladaptive Evaluative Concerns;
MINI:	Mini International Neuropsychiatric Interview;
n:	Sample size;
O:	Organisation;
OBQ-P:	Perfectionism subscale of the Obsessive Beliefs Questionnaire;
OBQ-PC:	Perfectionism/Certainty subscale of the Obsessive Beliefs Questionnaire;
OCCWG:	Obsessive Compulsive Cognitions Working Group;
OCD:	Obsessive-compulsive disorder;
OCI-R:	Obsessive Compulsive Inventory-Revised;
OCPD:	Obsessive-Compulsive Personality Disorder;
OOP:	Other-Oriented Perfectionism;
PANPS:	Positive and Negative Perfectionism Scale;
PAS:	Positive Achievement Striving;
PAQ:	Parental Authority Questionnaire;
PC:	Parental Criticism;
PCI:	Perfectionism Cognitions Inventory;
PD:	Panic disorder;
PDA:	Panic disorder with agoraphobia;
PE:	Parental Expectations;
PE+PC:	The combined subscales of Parental Expectations and Parental Criticism;

PS: Personal Standards;

PSWQ: Penn State Worry Questionnaire;

PTSD: Post-traumatic stress disorder;

Q-LES-Q-18: Quality of Life, Enjoyment and Satisfaction Questionnaire-18;

RCI: Reliable Change Index;

RCT: Randomised controlled trial;

rel: Reliability of the outcome measure;

RSES: Rosenberg Self-Esteem Scale;

S_1: Variability of the outcome measure at pre-intervention;

SAS: Sociotropy Autonomy Scale;

SD: Standard deviation;

SE: Standard error of measurement;

SOP: Self-Oriented Perfectionism;

SPP: Socially-Prescribed Perfectionism;

SPSS: Statistical Package for the Social Sciences;

sr^2: Part correlation squared;

total FMPS: Total score on the Frost Multidimensional Perfectionism Scale;

$X_{posttest}$: Individual's post-test score on the outcome;

$X_{pretest}$: Individual's pre-test score on the outcome;

Y-BOCs: Yale-Brown Obsessive Compulsive Scale.

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ABSTRACT

Perfectionism has been proposed to be a process which occurs across psychological disorders, namely a transdiagnostic process (Egan, Wade, & Shafran, 2011). This was based on findings of perfectionism being associated with depressive disorders, eating disorders, bipolar disorder and anxiety disorders (Egan et al., 2011; Shafran & Mansell, 2001). An implication of this transdiagnostic conceptualisation was that interventions that target perfectionism could potentially decrease the symptoms of multiple psychological disorders (Egan et al., 2011). One limitation of this literature was that studies had not examined the associations between perfectionism and the symptoms of generalised anxiety disorder in a clinical sample. This was important to examine as it would provide information about whether perfectionism treatments could potentially decrease generalised anxiety disorder in addition to other psychological disorders.

An additional limitation of the literature was that the only randomised controlled trials (RCTs) examining cognitive behaviour therapy (CBT) for perfectionism in clinical samples had been administered in an individual format (Riley, Lee, Cooper, Fairburn, & Shafran, 2007; Steele & Wade, 2008). No RCT had examined CBT for perfectionism delivered in a group format using a clinical sample. This was important to consider as group treatments can offer cost savings for clients, increased time efficiency for psychologists (Himle, Van Etten, & Fischer, 2003) and the potential for additional therapeutic advantages relative to individual treatments (Bieling, McCabe, & Antony, 2006; Yalom, 1995; Yalom & Leszcz, 2005).

This thesis contained two linked studies that sought to overcome these limitations. In Study I, the relationships between dimensions of perfectionism and pathological worry were examined in individuals with elevated perfectionism and

generalised anxiety disorder who presented for perfectionism treatment. The utility of perfectionism in predicting a principal diagnosis of generalised anxiety disorder was also explored in a larger sample with elevated perfectionism and a range of diagnoses who presented for perfectionism treatment. Perfectionism as measured by Concern over Mistakes, Personal Standards and Clinical Perfectionism Questionnaire scores each significantly predicted pathological worry after accounting for gender, anxiety and depression. Perfectionism as measured by Doubts about Actions significantly predicted a principal diagnosis of generalised anxiety disorder. These findings supported perfectionism being a transdiagnostic process (Egan et al., 2011). Importantly, these findings provided a rationale for Study II to investigate whether perfectionism interventions could reduce generalised anxiety disorder symptoms as well as the symptoms of other disorders.

Study II examined the efficacy of group cognitive behavioural therapy targeting clinical perfectionism (group CBT-CP) using a randomised controlled design and a clinical sample. Participants randomised to 8 sessions of group CBT-CP exhibited significantly greater decreases in multiple dimensions of perfectionism, eating disorder symptoms, depression, social anxiety and anxiety sensitivity, as well as significantly greater increases in self-esteem and quality of life relative to a waitlist control condition. Treatment gains were maintained at 6-month follow-up. While group CBT-CP tended to produce greater reductions in pathological worry compared to a waitlist control group, this was not significant, which was likely due to a Type II error (Tabachnick & Fidell, 2007). There was reliable change in dimensions of perfectionism, eating disorder symptoms, self-esteem and quality of life as well as some clinically significant change in perfectionism (Concern over Mistakes) and recovery from psychological disorders. Collectively, the findings contributed toward establishing the efficacy of group CBT-CP

(Chambless & Hollon, 1998) and highlighted the multidimensional effect of this treatment in reducing multiple psychological symptoms and improving quality of life.

CHAPTER 1

Introduction and Literature Review

1.1. Overview

This thesis consists of two linked studies that aim to increase knowledge of perfectionism and how it can be treated. Reviews have highlighted that perfectionism is associated with eating disorders, depressive disorders, bipolar I and II disorder, obsessive-compulsive disorder and anxiety disorders (Egan, Wade, & Shafran, 2011; Shafran & Mansell, 2001). Perfectionism has therefore been argued to be a process which occurs across psychological disorders, namely a transdiagnostic process (Egan et al., 2011). This implies that treatments that target perfectionism may concurrently decrease the symptoms of multiple disorders (Egan et al., 2011). One limitation of this literature is that research has not yet examined the association between perfectionism and generalised anxiety disorder (GAD) symptoms in a clinical sample. This is important to consider as it provides information about whether perfectionism treatments could potentially reduce GAD symptoms in addition to the symptoms of other disorders. In Study I of this thesis, the relationships between dimensions of perfectionism and pathological worry are examined in individuals with elevated perfectionism and GAD who presented for perfectionism treatment. Additionally, the utility of perfectionism in predicting a principal diagnosis of GAD is explored in a larger clinical sample with elevated perfectionism and a range of diagnoses who presented for perfectionism treatment.

The findings of Study I are an important precursor to the principal study of this thesis (Study II) which examines the efficacy of group cognitive behavioural therapy (CBT) for clinical perfectionism using a randomised controlled design and a clinical sample. To date, no randomised controlled trial has investigated the efficacy

of group CBT for clinical perfectionism in a clinical sample. This is important to investigate as group treatments offer greater time efficiency for psychologists, cost savings for clients (Himle, Van Etten, & Fischer, 2003), as well as the potential for therapeutic advantages compared to individual treatments (Bieling, McCabe, & Antony, 2006; Yalom, 1995; Yalom & Leszcz, 2005). Collectively, the studies of this thesis further the knowledge and treatment of perfectionism.

1.2. Definitions and Measures of Perfectionism

1.2.1. Unidimensional definitions and measures of perfectionism.

Perfectionism has been described in the literature for over 100 years (Frost & Steketee, 1997), with the earliest writings on the construct dating back to Janet (1898). Since then numerous definitions of perfectionism have been proposed (Shafran, Cooper, & Fairburn, 2002). Theorists have defined perfectionism in a unidimensional manner based on the establishment of disproportionately high personal standards upon which self-esteem is centred (Burns, 1980a; Hollender, 1965; Sorotzkin, 1985). In his seminal article, Hollender (1965) quoted English and English's (1958, p.379) dictionary definition of perfectionism, which was "the practice of demanding of oneself or others a higher quality of performance than that required by the situation". Hollender (1965) further asserted that an individual with perfectionism "sees himself as being judged for what he does, not for what he is" (p.99) and "is continually dependent upon his performance for feelings of acceptability, adequacy and goodness" (p.99). Burns (1980a) identified perfectionism as involving setting impractically high standards, ceaselessly striving for these standards and evaluating oneself predominantly on the attainment of these standards. Burns (1980a, p.34) stated that individuals with perfectionism "are likely to respond to the perception of failure or inadequacy with a precipitous loss of self-

esteem that can trigger episodes of severe depression and anxiety". Sorotzkin (1985, p.564) emphasised that "perfectionists measure their self-worth in terms of unachievable goals of accomplishment and productivity and thus any deviation from the perfectionistic goal is likely to be accompanied by moralistic self-criticism and lowered self-esteem". Across these definitions, perfectionism is depicted as a maladaptive trait that involves seeking to attain excessively high personal standards and centring self-evaluation upon whether such standards are attained (Burns, 1980a; English & English, 1958; Hollender, 1965; Sorotzkin, 1985).

There are several measures of unidimensional perfectionism. The perfectionism subscale of the Dysfunctional Attitudes Scale (DAS-SC; Imber et al., 1990; Weissman & Beck, 1978) examines the perception individuals have of themselves and others when their standards are not reached. This subscale has high internal consistency (Steele et al., 2013) and validity (Dunkley, Sanislow, Grilo, & McGlashan, 2004; Dunkley, Zuroff, & Blankstein, 2006) and is still frequently utilised to assess the relationship between perfectionism and psychopathology (e.g., Dunkley et al., 2004). Burns' (1980a) Perfectionism Scale was adapted from the Dysfunctional Attitudes Scale (Weissman & Beck, 1978) and assesses the degree to which one endorses perfectionist beliefs linking performance to self-evaluation. While studies have indicated that this measure has adequate internal consistency (Hewitt & Dyck, 1986) and validity (Hewitt, Mittelstaedt, & Wollert, 1989), these studies used non-clinical samples thus do not generalise to clinical populations. Few studies have investigated the psychometric properties of the Burns Perfectionism Scale (Burns, 1980a) in clinical samples, which may explain why this measure is no longer frequently used (Enns & Cox, 2002).

The perfectionism subscale of the Eating Disorders Inventory (EDI-P; Garner, Olmsted, & Polivy, 1983) assesses the setting of disproportionate personal standards. It is one of eight subscales developed to measure the psychological constructs pertinent to eating disorders (Enns & Cox, 2002; Garner et al., 1983). The reliability and validity of the EDI-P in eating disorder samples is well established and it is frequently used to assess perfectionism in individuals with eating disorders. However, the EDI-P is rarely used in other clinical samples therefore it is questionable whether its psychometric properties extend to these samples (Bardone-Cone et al., 2007; Enns & Cox, 2002). The perfectionism subscale of the Setting Conditions for Anorexia Nervosa Scale (Slade & Dewey, 1986) is one of five subscales measuring risk factors for an eating disorder. It has acceptable validity but only modest internal consistency (Enns & Cox, 2002), so is now rarely used. The Neurotic Perfectionism Questionnaire (Mitzman, Slade, & Dewey, 1994) assesses the experiences and attitudes related to neurotic perfectionism (e.g., excessively high standards, dissatisfaction with performance and self) in individuals with eating disorders. It has acceptable internal consistency and validity; however, it is not often used (Enns & Cox, 2002; Mitzman et al., 1994).

The perfectionism subscale of the Obsessive Beliefs Questionnaire (OBQ-P; Obsessive Compulsive Cognitions Working Group [OCCWG], 1997; 2001) assesses beliefs about there being perfect solutions, the necessity of flawless performance and concern over mistakes that are involved in the onset and maintenance of obsessive-compulsive disorder. While the OBQ-P demonstrated adequate reliability and validity, it exhibited high correlations with the Intolerance of Uncertainty subscale. Other subscales in the OBQ were also intercorrelated (OCCWG; 2003). A subsequent factor analysis of the OBQ items produced three subscales, one of which

included Perfectionism/Certainty (OBQ-PC), which has high internal consistency and convergent validity (OCCWG, 2005). The OBQ-PC is frequently utilised to assess perfectionism in obsessive-compulsive disorder research (OCCWG; 2005).

1.2.2. Critique of the unidimensional conceptualisation of perfectionism.

The unidimensional definition of perfectionism has been critiqued for multiple reasons (Frost, Marten, Lahart, & Rosenblate, 1990). The first critique was that the unidimensional definition depicted perfectionism as always being dysfunctional and related to psychopathology (Stoeber & Otto, 2006). It did not adequately differentiate between individuals who seek to attain high standards in a healthy, functional manner and those who seek to attain high standards in an unhealthy manner associated with distress (Frost et al., 1990). Hamachek (1978) had previously highlighted the differences between healthy and unhealthy striving using the concepts of normal perfectionists and neurotic perfectionists. Normal perfectionists set high standards for themselves but can accept that these standards may not always be attained and derive pleasure from striving. Neurotic perfectionists set high standards for themselves but have difficulties accepting when they have not attained these standards and rarely feel satisfied with their performance. The motivation behind their striving is a fear of failure (Hamachek, 1978). Therefore, the main difference between normal and neurotic perfectionists is not the setting of high standards, but the added tendency of neurotic perfectionists to be excessively critical about their performance. Definitions of perfectionism therefore needed to better differentiate between individuals who strive for standards in a healthy manner and those who strive for standards in an unhealthy manner where they excessively criticise their performance (Frost et al., 1990; Hamacheck, 1978).

A second critique of the unidimensional definition of perfectionism was that it is too narrow in focus (Frost et al., 1990). Frost et al. (1990) argued that definitions of perfectionism needed to encapsulate additional clinical features of perfectionism, such as excessive concern with errors of performance, doubts about performance, excessive need for orderliness and the importance assigned to parents' expectations and appraisals. Hewitt and Flett (1991a) further stated that the unidimensional definition of perfectionism did not acknowledge the interpersonal elements of perfectionism that play a role in the adjustment difficulties perfectionist individuals experience. Such interpersonal elements include when perfectionist standards are imposed on others or when one believes that others have perfectionist standards for oneself.

1.2.3. Multidimensional conceptualisation and measures of perfectionism. As a result of the critique of the unidimensional definition of perfectionism, several researchers in the 1990s posited that perfectionism is better conceptualised as a multidimensional construct (Frost et al., 1990; Hewitt & Flett, 1991a). Frost et al. (1990) and Hewitt and Flett (1991a) each constructed scales that measured components deemed to depict multidimensional perfectionism. Frost et al.'s (1990) Multidimensional Perfectionism Scale (FMPS) assesses six dimensions: Concern over Mistakes (CM): a heightened concern over making performance errors; Personal Standards (PS): setting oneself very high standards of performance; Parental Criticism (PC): believing one's parents will be critical of errors in performance; Parental Expectations (PE): believing one's parents expect a high level of performance; Doubts about Actions (DA): doubts surrounding one's performance; and Organisation (O): an excessive concern with being neat and organised. The sum of all of these subscales except O form the total FMPS score. Frost et al. (1990) did

not include O in the total FMPS score as it demonstrated weaker correlations with the other subscales as well as with the sum of the five FMPS subscales.

Hewitt and Flett's (1991a) Multidimensional Perfectionism Scale (HMPS) measures three elements of perfectionism: Self-Oriented Perfectionism (SOP): setting oneself high standards and being self-critical if one thinks these standards have not been met; Socially-Prescribed Perfectionism (SPP): believing others expect one to be perfect; and Other-Oriented Perfectionism (OOP): holding expectations of others being perfect. A vast amount of evidence has supported the reliability and validity of both multidimensional perfectionism scales (Enns & Cox, 2002; Egan et al., 2011). Numerous studies have utilised these multidimensional measures to assess the relationship between perfectionism and psychopathology (Egan et al., 2011).

Other measures of multidimensional perfectionism have been developed; however, these have been used to a lesser extent than the FMPS and HMPS scales. The Almost Perfect Scale-Revised (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001) is a revision of the Almost Perfect Scale (Slaney & Johnson, 1992, as cited in Slaney et al., 2001) and assesses three dimensions of perfectionism: APS-R- High Standards: having high personal standards; APS-R-Order: being orderly; and APSR-Discrepancy: the perceived discrepancy in one's standards and performance. These subscales have acceptable internal consistency and validity (Slaney et al., 2001). The Positive and Negative Perfectionism Scale (PANPS; Terry-Short, Owens, Slade, & Dewey, 1995) has a positive perfectionism subscale that assesses perfectionism aimed at achieving positive outcomes and a negative perfectionism subscale that assesses perfectionism aimed at avoiding negative outcomes (Terry-Short et al., 1995). These subscales have demonstrated high internal consistency in a clinical and an athlete sample (Egan, Piek, Dyck, & Kane, 2011). The validity of the negative

perfectionism subscale was supported in a clinical sample; however, the validity of the positive perfectionism scale was weaker in a clinical sample than in an athlete sample and a control sample as it was associated with measures of pathology such as the Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996; Egan, Piek, et al., 2011).

Flett, Hewitt, Blankstein, and Gray (1998) asserted that all of the multidimensional perfectionism measures have focused on trait perfectionism. However, there are additional aspects that require measurement such as the frequency of automatic, perfectionist cognitions that arise when individuals with elevated perfectionism experience a discrepancy between their ideal and actual self, or between their ideal and actual performance outcome. Flett et al. (1998) developed the Perfectionism Cognitions Inventory (PCI; Flett et al., 1998) to assess the frequency of perfectionist cognitions in the past week. This measure has been found to have high internal consistency and validity in clinical samples (Flett et al., 1998).

The Perfectionism Inventory (Hill et al., 2004) was designed to assess the constructs from the FMPS and HMPS scales as well as additional constructs such as rumination over imperfect performance. It assesses eight dimensions: Striving for Excellence: the propensity to strive for high standards; High Standards for Others: having perfectionist standards for others; Need for Approval: obtaining validation from others and sensitivity to criticism; Concern over Mistakes: the propensity to be anxious or distressed in relation to making an error; Perceived Parental Pressure: the need for perfect performance to seek approval from parents; Planfulness: the propensity to plan in advance and ponder over decisions; Organisation: orderliness and neatness; and Rumination: the propensity to ruminate over past errors, imperfect

performance and future errors. Each subscale has high internal consistency and validity (Hill et al., 2004).

Factor analyses of many of the multidimensional perfectionism scales have predominantly supported there being two higher order dimensions of perfectionism: a maladaptive dimension and an adaptive dimension. This factor structure appears to be stable, although different researchers refer to the dimensions by different names (Bieling, Israeli, & Antony, 2004; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993). Frost, Heimberg, et al. (1993) and Bieling, Israeli, et al. (2004) found that items from the FMPS and HMPS loaded on factors of maladaptive evaluative concerns (DA, CM, PE, PC, and SPP) and positive achievement striving (PS, O, OOP, and SOP). Frost et al. (1993) reported that maladaptive evaluative concerns (MEC) was positively correlated with depressive symptoms and negative affect, whereas positive achievement striving (PAS) was positively correlated with positive affect. Bieling, Israeli, et al. (2004) found that MEC had stronger relationships with stress, anxiety, depression and test-taking anxiety than did PAS. These findings supported MEC being a maladaptive form of perfectionism associated with psychological symptoms and PAS being adaptive (Bieling, Israeli, et al., 2004; Frost et al., 1993).

Attempts to replicate the two factor structure with items from the FMPS, HMPS and APS-R have primarily supported a two factor solution (Blankstein & Dunkley, 2002; Blankstein, Dunkley, & Wilson, 2008). Blankstein and Dunkley (2002) and Blankstein et al. (2008) found that items loaded on two factors of evaluative concerns perfectionism (CM, DA, SPP, APS-R-Discrepancy) and personal standards perfectionism (Standards, PS, SOP). Suddarth and Slaney (2001) found support for maladaptive perfectionism (CM, DA, PC, PE, SPP, and APS-R-

Discrepancy) and adaptive perfectionism (PS, SOP, OOP, and APS-High Standards); however, also found support for a third factor of Order/Organisation (O and APS-Order). Suddarth and Slaney (2001) argued that the first two factors are consistent with there being a maladaptive and an adaptive form of perfectionism and that while researchers such as Frost at al. (1990) did not deem organisation to be central to perfectionism, it may be worthy of further consideration.

These studies predominantly support there being two higher order perfectionism dimensions: MEC and PAS (Bieling, Israeli, et al., 2004; Blankstein & Dunkley, 2002; Blankstein et al., 2008; Frost et al., 1993); however, the non-clinical samples used prevent generalisation to clinical populations. Cox, Enns, and Clara (2002) conducted a factor analysis of the FMPS and HMPS items in a clinical sample and provided support for a two factor solution of maladaptive perfectionism (CM, DA, PC, SPP) and adaptive perfectionism (PS, O, SOP). While this solution can be generalised to clinical samples, a reduced number of subscale items were included in this confirmatory factor analysis, thus replication of this factor analysis in clinical samples is required.

Cross-sectional and prospective studies have frequently supported MEC perfectionism and its component subscales (e.g., CM, DA, SPP) being associated with a wide variety of psychopathology (Egan et al., 2011) as discussed later in this chapter. However, the clinical literature in regard to PAS being benign is mixed (Egan et al., 2011; Egan, Wade, & Shafran, 2012; Stoeber & Otto, 2006). Stoeber and Otto (2006) reviewed the perfectionism literature and concluded that perfectionistic strivings (PS, SOP), particularly when controlling for perfectionistic concerns (DA, CM, SPP) is not only benign but is a positive dispositional characteristic associated with positive outcomes. The positive outcomes associated

with perfectionistic strivings included endurance, achievement, positive affect, life satisfaction, greater extraversion, conscientiousness and reduced suicidal ideation. Once perfectionistic concerns were accounted for, the positive outcomes associated with perfectionistic strivings extended to greater perceived social support and reduced depression (Stoeber & Otto, 2006). As Stoeber and Otto's (2006) conclusion was based on a review of a large number of studies, this adds strength to their claim that PAS is associated with positive outcomes.

Nonetheless, other researchers have presented evidence that challenges Stoeber and Otto's (2006) claims of there being an adaptive form of perfectionism. There is evidence that PS is a risk factor for eating disorder pathology (Wade et al., 2008) and that PS and SOP influence the severity of eating disorder pathology (Bardone-Cone et al., 2008; Lethbridge, Watson, Egan, Street, & Nathan, 2012). There is also support for SOP being related to depressive symptoms (Hewitt & Flett, 1993) and PS being associated with panic disorder symptoms (Iketani et al., 2002a). Reviews by Egan et al. (2011) and Egan et al. (2012) have drawn upon such evidence to posit that PAS perfectionism may not be universally adaptive. In view of all of the evidence presented, it appears that MEC is a maladaptive form of perfectionism, whereas PAS, despite being associated with some positive characteristics, may not be adaptive in all circumstances.

1.2.4. Critique of the multidimensional conceptualisation of perfectionism. The frequent use of the multidimensional perfectionism scales (Frost et al., 1990; Hewitt & Flett, 1991a) in the perfectionism literature has resulted in many researchers accepting the notion of perfectionism being a multidimensional construct; however, this conceptualisation is not without critique (Shafran et al., 2002). Shafran et al. (2002) criticised definitions of multidimensional perfectionism

as being overly equated with scores on the FMPS and HMPS (Frost et al., 1990; Hewitt & Flett, 1991a), rather than being defined solely on theoretical and clinical descriptions of perfectionism. This was argued to be problematic because the multidimensional perfectionism scales assess not only the key components of perfectionism but also related constructs that are not essential to perfectionism definitions. Shafran et al. (2002) specified that only items from the PS, CM and SOP subscales provide the closest approximations to theoretical descriptions of perfectionism (e.g., Burns, 1980a), whereas the remaining subscales of the FMPS and HMPS measure related constructs (Shafran et al., 2002). Shafran et al. (2002) contended that this reliance on the multidimensional conceptualisation of perfectionism was one of the reasons why there had been not been greater progression in the use of perfectionism to inform theoretical models or interventions for psychological disorders. They asserted that if researchers are to focus on perfectionism as a mechanism to better understand and treat psychological disorders, perfectionism needed to be defined in a more clinically-relevant manner.

1.2.5. Definition and measurement of clinical perfectionism. Shafran et al. (2002, p.778) put forward the term 'clinical perfectionism', defined as "the overdependence of self-evaluation on the determined pursuit of personally demanding, self-imposed standards in at least one highly salient domain despite adverse consequences". This definition encompasses three key features. The first feature is the setting of personally demanding standards accompanied by self-criticism. Individuals with clinical perfectionism set standards for themselves that they view to be extremely demanding. These standards do not necessarily have to be objectively challenging, what is crucial is that the standards are demanding for that person. The standards are set in areas of life deemed personally relevant to the

individual (e.g., work, body shape). Individuals with clinical perfectionism selectively attend to the instances where they think they have not reached their standards and respond with self-criticism (Shafran et al., 2002).

The second feature of clinical perfectionism is striving for standards despite negative consequences. Individuals with clinical perfectionism unremittingly strive to attain their standards even when it results in negative outcomes. These negative outcomes may occur in physical, cognitive, emotional, social and behavioural domains (Shafran et al., 2002). Physically, individuals may experience muscle tension, an upset stomach, insomnia, exhaustion or tiredness. In the cognitive domain, individuals may experience heightened self-criticism, lowered concentration, increased rumination over mistakes and low self-esteem. Emotional effects may include anxiety, stress and low mood. In the behavioural domain, individuals may engage in procrastination, avoidance, repetitive checking or may spend extraordinary amounts of time on tasks. Individuals may experience social isolation due to devoting excess time to achievement-related areas. Regardless of these negative consequences, individuals with clinical perfectionism will continue to strive for their standards (Shafran et al., 2002; Shafran, Egan, & Wade, 2010).

The third feature of clinical perfectionism is that a person's self-evaluation is almost singularly dependent on whether they believe they have reached their standards in their important domain(s). As alternate domains of self-evaluation are disregarded, if individuals believe they have not attained their standards in their area, they are likely to adopt a global negative perception of themselves, such as being a failure as a person, which further creates negative outcomes (Shafran et al., 2002, Shafran et al., 2010). Shafran et al. (2002) highlighted that striving for standards by itself can be adaptive; it is when self-worth is excessively based on striving and

meeting standards, when one continues to strive in the presence of negative consequences and when one is self-critical when they perceive their standards have not been attained, that they are experiencing clinical perfectionism rather than the healthy pursuit of excellence.

As Shafran et al.'s (2002) definition of clinical perfectionism incorporates setting and striving for personally demanding standards and responding in a negative manner to perceived errors in performance, some researchers have measured this construct using the CM and PS subscales (Egan et al., 2012). A measure directly based on the clinical perfectionism definition has also been constructed. The Clinical Perfectionism Questionnaire (CPQ; Fairburn, Cooper, & Shafran, 2003b) assesses the setting of and striving to attain standards and the impact on self-esteem if an individual perceives that his/her standards have not been attained (Fairburn et al., 2003b; Riley et al., 2007). As the CPQ assesses clinical perfectionism over the past four weeks it is sensitive to clinical change (Riley et al., 2007). There is also evidence of the CPQ having high internal consistency and validity in community samples and eating disorder samples (Chang & Sanna, 2012; Dickie, Surgenor, Wilson, & McDowall, 2012; Egan, Shafran, et al., 2014; Steele, O'Shea, Murdock, & Wade, 2011).

1.2.6. The maintenance model of clinical perfectionism. Shafran et al. (2002) created a model of how clinical perfectionism is maintained. This was updated by Shafran et al. (2010) to emphasise the role of performance-related behaviours and is presented in Figure 1.

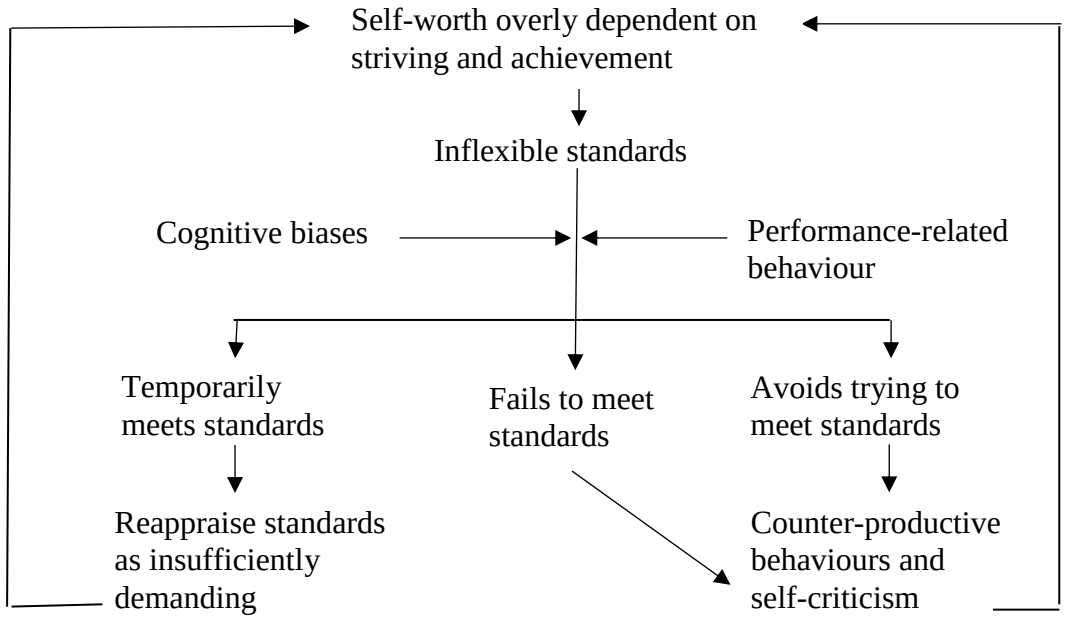

Figure 1. The revised cognitive behavioural model of the maintenance of clinical perfectionism (reproduced from Shafran et al., 2010).

The top of this model depicts the self-esteem of individuals with clinical perfectionism being excessively reliant on striving toward and attaining personally demanding standards in personally relevant areas. These standards are expressed in the form of dichotomous, inflexible rules. For example, in the domain of study, a personally demanding standard expressed as a rule might be: I must always receive a high distinction mark. In the domain of eating, shape and weight, the rule might be: I must always weigh 48 kilograms (Shafran et al., 2002; Shafran et al., 2010).

The model further proposes that individuals with clinical perfectionism possess cognitive biases of hypervigilant monitoring, negative filter, discounting the positive and dichotomous thinking, which impact upon how they evaluate their striving toward and achievement of standards (Shafran et al., 2002; Shafran et al., 2010). Individuals continually monitor their performance, selectively attend to perceived flaws in striving or performance and disregard successes (Antony & Swinson, 1998; Egan et al., 2011; Shafran et al., 2002; Shafran et al., 2010).

Additionally, these individuals partake in a variety of performance-related behaviours. These may include performance checking behaviours such as testing performance, reassurance seeking or making comparisons to others. Other performance-related behaviours may include procrastination, avoidance and other counter-productive behaviours such as spending excessive time organising, making lists, being over-thorough or working at the expense of sleep (Egan et al., 2011; Shafran et al., 2002; Shafran et al., 2010).

It is posited that this combination of dichotomous rigid standards, the biased appraisal of striving and performance and the presence of performance-related behaviours creates a high likelihood that individuals will conclude that they have failed to attain their standards (Shafran et al., 2002; Shafran et al., 2010). Individuals respond to this perceived failure by criticising themselves. This self-criticism is often accompanied by lowered mood and participation in additional behaviours such as procrastination and avoidance. As self-esteem is excessively reliant on striving and attaining standards in personally relevant domains, these individuals over-generalise to adopt a global negative perception of themselves. The reliance of their self-esteem on striving and attaining their standards is fortified (Egan et al., 2011; Shafran et al., 2002; Shafran et al., 2010).

An alternative pathway in this model is that perfectionist individuals set standards that are so personally demanding and have such a great fear about not attaining these standards that they avoid trying to reach their standards (Shafran et al., 2002; Shafran et al., 2010). An example of this is when an individual has a standard of needing to receive a high distinction mark and fears not attaining this standard to the extent that he/she does not submit an assignment. A consequence of individuals avoiding to attain a standard is that they fail to reach the standard. This

failure again engenders self-criticism and participation in counter-productive behaviours. These individuals adopt a global negative view of themselves and their self-esteem being overly contingent on striving and achievement is strengthened (Egan et al., 2011; Shafran et al., 2002; Shafran et al., 2010).

According to this model, there are some occasions when perfectionist individuals achieve their standards (Shafran et al., 2002; Shafran et al., 2010). For example, they may receive a high distinction mark. This results in two outcomes. First, meeting standards may momentarily enhance self-esteem or avert negative self-perceptions, which may increase the likelihood of individuals striving for these standards in the future (Burns, 1980a; Shafran et al., 2002; Shafran et al., 2010). Second, individuals may disregard their accomplishments and reframe their standards as not being hard enough. They will re-set their standards to be more personally demanding. Striving for higher standards will further increase the likelihood of individuals judging that they have failed to attain their standards, which will result in self-criticism, global negative perceptions of themselves and will fortify the reliance of their self-worth on striving and achievement (Egan et al., 2011; Shafran et al., 2002; Shafran et al., 2010).

Shafran et al. (2002) specified that when one's area of clinical perfectionism overlaps with the area impacted by a psychological disorder, the clinical perfectionism will interact with the maintenance factors of the disorder to maintain the disorder and impede treatment outcome. For example, clinical perfectionism has been argued to interact with the over-valuation of eating, weight and shape and how they are controlled to maintain eating disorder symptoms (Fairburn, Cooper, & Shafran, 2003a). It has been proposed that under these circumstances, interventions

that focus on perfectionism will assist to reduce psychopathology (Egan et al., 2011; Fairburn et al. 2003a, Shafran et al., 2002; Shafran et al., 2010).

1.2.7. Studies examining components of the maintenance model.

Evidence from qualitative studies has supported the maintenance model of clinical perfectionism (Egan, Piek, Dyck, Rees, & Hagger, 2012; Riley & Shafran, 2005; Shafran et al., 2002; Shafran et al., 2010). Riley and Shafran (2005) found that individuals with clinical perfectionism, as determined by a semi-structured interview, frequently stated that they set themselves dysfunctional standards, strived in the presence of negative effects and reacted in a self-critical manner to failure, whereas individuals without clinical perfectionism did not. Individuals with clinical perfectionism also exhibited cognitive biases such as dichotomous thinking, negative filter, discounting the positive, double-standards and catastrophising. There was also support for individuals with clinical perfectionism setting dichotomous rules, as well as engaging in performance-checking behaviours, procrastination, avoidance and counter-productive behaviours such as list making.

Egan, Piek et al.'s (2012) qualitative study compared a clinical sample of participants with high negative perfectionism scores on the PANPS to an athlete sample with low negative perfectionism scores. Consistent with perfectionist individuals exhibiting cognitive biases when appraising their striving and performance (Shafran et al., 2002; Shafran et al., 2010), Egan, Piek, et al. (2012) found that the sample with high negative perfectionism reported dichotomous thinking in relation to attaining a standard, whereas the sample with low negative perfectionism did not. In line with perfectionist individuals experiencing negative self-evaluation in relation to not attaining a standard (Shafran et al., 2002; Shafran et al., 2010), Egan, Piek, et al. (2012) found that the sample with high negative

perfectionism reported negative internal attributions regarding not attaining a standard where they viewed themselves as a failure. The sample with low negative perfectionism stated that they had not failed and made external attributions for not attaining a standard. These qualitative studies provide support for the validity of the maintenance model of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010); however, each study had moderately small sample sizes, which prevented the researchers from examining whether there were statistically significant differences in the characteristics of clinical perfectionism endorsed by individuals with and without elevated perfectionism. As the primary researchers conducted the interviews and interpreted the qualitative data, it is also possible that the data was influenced by researcher bias (Egan, Piek, et al., 2012; Riley & Shafran, 2005).

Quantitative studies have also supported aspects of the maintenance model of clinical perfectionism (Bieling, Israeli, Smith, & Antony, 2003; Egan, Dick, & Allen, 2012; Shafran et al., 2002; Shafran et al., 2010). Consistent with perfectionist individuals setting themselves demanding, unrealistic standards, Bieling et al. (2003) found that significant associations existed between total FMPS, adaptive perfectionism (PS, SOP, O, OOP) and maladaptive perfectionism (CM, DA, PE, PC, SPP) with students setting higher standards for an assessment and students not attaining these standards. Egan, Dick, et al. (2012) found that higher scores on the CPQ were significantly associated with setting greater standards in a non-verbal reasoning task as well as a higher likelihood of not attaining these standards. These studies support elements of clinical perfectionism (PS, SOP, CM, CPQ) and related perfectionism dimensions being associated with the setting of demanding, unrealistic standards (Shafran et al., 2002; Shafran et al., 2010).

Studies have also offered support for perfectionist individuals exhibiting cognitive biases (Egan, Piek, Dyck, & Rees, 2007; Yiend, Savulich, Coughtrey, & Shafran, 2011). Egan et al. (2007) found that dichotomous thinking as measured by the Dichotomous Thinking Scale (Byrne, Cooper, & Fairburn, 2004) was a significant positive predictor of negative perfectionism scores on the PANPS in a clinical sample, a student sample and a triathlete sample. This supported significant associations existing between dichotomous thinking and negative perfectionism (Egan et al., 2007). Consistent with perfectionist individuals demonstrating interpretative biases, Yiend et al. (2011) found that when individuals were asked to interpret ambiguous text passages, those with higher DAS-SC and CPQ scores were significantly more likely to rate perfectionist interpretations as bearing greater similarity to the text passage than those with low DAS-SC and CPQ scores, whereas the opposite pattern occurred in regard to non-perfectionist interpretations. This interpretative bias occurred for the passages that were ambiguous in perfectionist meaning but not those that were ambiguous in emotional meaning. Yiend et al. (2011) contended that this pattern was consistent with perfectionist individuals having interpretation biases specific to perfection-relevant material that are not a by-product of a general negative interpretation bias (Yiend et al., 2011).

There is also evidence consistent with perfectionist individuals engaging in performance-related behaviours (Lee, Roberts-Collin, Coughtrey, Phillips, & Shafran, 2013; Yiend et al., 2011). Yiend et al. (2011) found that significantly more individuals with higher DAS-SC and CPQ scores opted to check for mistakes in their performance on a bead-sorting task and spent a significantly greater time checking for these mistakes than those with lower DAS-SC and CPQ scores. Lee et al. (2013) similarly found that individuals with high perfectionism, based on a median split of

FMPS total perfectionism score, spent significantly longer on tasks, participated in a greater number of safety and checking behaviours, experienced greater difficulties stopping tasks and had greater concerns about finishing tasks relative to individuals classified as having low perfectionism.

The above findings are consistent with perfectionist individuals having certain cognitive biases and exhibiting performance-related behaviours (Shafran et al., 2002; Shafran et al., 2010); however, based on the cross-sectional designs of these studies, inferences cannot be made about the aetiological role of cognitive biases and performance-related behaviours in perfectionism. Few studies in this area enable such inferences to be made. One exception is a second study by Yiend et al. (2011). Yiend et al. (2011) induced perfectionist or non-perfectionist biases in individuals without elevated perfectionism and examined whether this manipulation led to changes in perfectionist behaviours on a bead sorting task. Individuals randomised to the perfectionist-induced condition more readily endorsed perfectionist interpretations of ambiguous text passages and increased their time checking for mistakes, whereas those in the non-perfectionist induced condition more readily endorsed non-perfectionist interpretations and decreased their time checking for mistakes. This study is commendable due to its experimental design, which provides greater support for the maintaining role of interpretative biases in clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010; Yiend et al., 2011).

Studies have found that elevated perfectionism is associated with negative reactions to perceived failure to meet standards; however, there are inconsistencies in which dimensions of perfectionism are associated with such reactions (Besser, Flett, & Hewitt, 2004; Besser, Flett, Hewitt, & Guez, 2008; Stoeber & Yang, 2010). Besser et al. (2004) discovered that individuals with higher SOP demonstrated

increased rumination and reduced levels of positive affect following feedback of failure. Besser et al. (2008) however, found that elevated SPP not SOP was associated with significantly greater anxiety and dysphoria as well as significantly lower self-esteem following feedback of poor performance. Stoeber and Yang (2010) reported that higher SOP and SPP were significantly associated with greater embarrassment and dissatisfaction after achievement of a flawed outcome. Future research is needed to clarify the associations between SOP, SPP and negative reactions to perceived failure.

There is mixed support for perfectionist individuals reframing their standards after attaining success (Egan, Dick, et al., 2012; Kobori, Hayakawa, & Tanno, 2009; Stoeber, Hutchfield, & Wood, 2008). Kobori et al. (2009) found that SOP was a significant predictor of whether students chose to increase their standards following success. Stoeber et al. (2008) found that perfectionistic striving, as measured by the Striving for Perfection Scale (Stoeber & Rambow, 2007) was a significant predictor of whether students selected a more difficult standard to pursue following success; however, self-critical perfectionism, as measured by the self-criticism subscale of the revised Attitude Towards Self Scale (Carver, La Voie, Kuhl, & Ganellen, 1988) was a significant positive predictor of decreasing standards after both success and failure feedback (Stoeber et al., 2008). Egan, Dick, et al. (2012) did not find support for CPQ scores significantly predicting the reframing of standards after failure or success in a non-clinical sample; it was only participants' actual level of failure or success on a task that predicted their reframing of standards. Additional research is needed to clarify the influence of perfectionism on the reframing of standards after failure or success, with a view to investigating variables that may differentially mediate this relationship.

In sum, there is support for perfectionist individuals setting demanding standards (Bieling et al., 2003; Egan, Dick, et al., 2012), engaging in cognitive biases and performance-related behaviours (Egan et al., 2007; Lee et al., 2013; Yiend et al., 2011), and some evidence that these cognitive biases have an aetiological role in the maintenance of perfectionism (Yiend et al., 2011). There is support for perfectionist individuals exhibiting negative reactions to failure, although the precise relationships between SOP, SPP and these negative reactions require clarification (Besser et al., 2004; Besser et al., 2008; Stoeber & Yang, 2010). There is mixed evidence for perfectionist individuals reframing their standards after success (Egan, Dick, et al., 2012; Kobori et al., 2009; Stoeber et al., 2008). These studies provide some support for the maintenance model of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010); however, the majority of these studies are correlational studies in non-clinical samples, which have only examined one or two components of the maintenance model (Shafran et al., 2002; Shafran et al., 2010). To provide greater support for the model, confirmatory factor analytic studies need to be conducted to examine the fit of the whole model to data. Furthermore, studies utilising clinical samples are needed to ensure that the model is applicable for clinical populations.

1.2.8. Critique of the conceptualisation of clinical perfectionism. Shafran et al.'s (2002) definition of clinical perfectionism is not without critique. Hewitt, Flett, Besser, Sherry, and McGee (2003) posited that perfectionism is still better conceptualised as a multidimensional construct rather than a unidimensional construct. These researchers contended that Shafran et al.'s (2002) clinical perfectionism construct does not sufficiently depict the essential psychopathology of clinical perfectionism and listed various reasons for this, one being that the clinical

perfectionism definition did not make reference to interpersonal processes. Shafran, Cooper, and Fairburn (2003) responded to this critique by stating that their (2002) clinical perfectionism definition concentrated on the self-oriented factors necessary for the persistence of clinical perfectionism. Shafran et al. (2003) maintained that concentrating on these factors is more likely to enable the successful treatment of psychopathology as opposed to concentrating on broader definitions of perfectionism that encompassed self-focussed and interpersonal processes. Currently, there is still no consensus among researchers as to the best conceptualisation of perfectionism.

1.2.9. The conceptualisation of perfectionism adopted by the current research. As many different conceptualisations of perfectionism have been discussed, it is fitting to conclude this section by expressing the conceptualisation of perfectionism with which the current research aligns. The current study aligns with Shafran et al.'s (2002) conceptualisation of clinical perfectionism. The primary reason for adopting this conceptualisation is that it is a clearer definition that has greater clinical relevance than the multidimensional conceptualisation (Shafran et al., 2002). The primary researcher agrees with Shafran et al. (2002) that the reliance on the multidimensional conceptualisation of perfectionism did not lead to clinical interventions for perfectionism. As Shafran et al.'s (2002) conceptualisation concentrates on the maintenance factors of clinical perfectionism, it parallels the approach to conceptualisation adopted by other psychological disorders that now have efficacious treatments (Shafran et al., 2002). Furthermore, conceptualising clinical perfectionism in this manner has already led to studies trialling cognitive behavioural therapies for clinical perfectionism (e.g., Riley et al., 2007; Steele et al., 2013). As Study II of the current research examines the efficacy of group cognitive

behavioural therapy for clinical perfectionism, it is logical for this study to align with Shafran et al.'s (2002) conceptualisation of clinical perfectionism.

Nevertheless, one cannot circumvent the fact that the majority of the previous perfectionism literature has utilised the multidimensional measures of perfectionism, as well as unidimensional measures such as EDI-P and DAS-SC. When providing a comprehensive summary of the perfectionism literature, these studies need to be considered (Shafran et al., 2002). As Shafran et al. (2002, p.777) stated, "despite the problems with the broadening of the construct of perfectionism, it is worthwhile looking at how the existing literature can further our understanding of the core concept". Consequently, the following sections on the aetiology of perfectionism as well as perfectionism being a transdiagnostic process will include studies that have assessed perfectionism using a variety of different measures.

1.3. The Aetiology of Perfectionism

In regard to the aetiology of perfectionism, the factor that has received the most theoretical and research attention has been parenting (Kawamura, Frost, & Harmatz, 2002). Many theorists have posited that perfectionism develops as a result of the communications that children have with their parents (Kawamura et al. 2002). Hamachek (1978) theorised that maladaptive perfectionism may develop when children are raised by parents who have high performance expectations but are never content with what the child has achieved. Pacht (1984) proposed that environments where children receive criticism for less than perfect performance may cultivate perfectionism as these children may not acquire less critical methods in which to appraise their performance. Barrow and Moore (1983) summarised four early parental interactions that may contribute to the emergence of perfectionism, including experiences with parents who are demanding and blatantly critical;

experiences with parents who have disproportionately high standards and expectations for performance; experiences with perfectionist parents who model perfectionist behaviours and attitudes; and experiences with parents who provide contingent, irregular or no parental approval. Frost et al. (1990) acknowledged the importance of parenting in the development of perfectionism by including items in the FMPS to measure parental expectations (PE) and parental criticism (PC).

There is empirical support for these theorised associations between parenting and perfectionism. Frost, Lahart, and Rosenblate (1991) discovered that a significant relationship existed between mothers' and daughters' total FMPS scores but not fathers' and daughters' total FMPS scores. Frost et al. (1991) argued that this finding was consistent with mothers modelling perfectionist attitudes and behaviours to their daughters. The authors further contended that the significant relationship occurring only between mothers and daughters may be due to same-sex modelling or because mothers may spend greater time with their daughters than fathers, which may enable greater opportunity for modelling of perfectionism to occur. Frost et al. (1991) also found daughters' reports of maternal and paternal harshness as well as mothers' self-reported harshness on the Father/Mother Trait Scale (Steketee, Grayson, & Foa, 1985) were each significantly associated with daughters' total FMPS scores. These findings support perceived parental harshness being associated with perfectionism; however, due to the cross-sectional design of the study, inferences cannot be made about causality.

Vieth and Trull (1999) provided further support for perfectionism being transmitted through same-sex modelling by demonstrating that the correlations between the SOP levels of mothers and daughters were significantly greater than the correlations between fathers' and daughters' SOP levels. Furthermore, the

correlations between the SOP levels of fathers and sons were significantly greater than the correlations between mothers' and sons' SOP levels. Flett, Hewitt, and Singer (1995) found that significant associations existed between men's ratings of their mothers' and fathers' authoritarian parenting styles on the Parental Authority Questionnaire (PAQ; Buri, 1991) and men's SPP levels; however, this relationship did not occur in women. Kawamura et al. (2002) reported that the perception of having experienced harsh parenting as measured by the Parental Harshness Scale (Frost et al., 1990), as well as the perception of having experienced authoritarian parenting as assessed by the PAQ (Buri, 1991), were each significantly related to greater DA and CM. This relationship occurred in females and males. Kawamura et al. (2002) posited that Flett et al.'s (1995) findings may have only occurred in males due to their use of SPP as their measure of maladaptive perfectionism, which has a greater interpersonal component than CM and DA which were used in Kawamura et al.'s (2002) study.

These studies have highlighted the associations between parental modelling, harshness, authoritarian parenting and total FMPS, SOP, SPP, CM and DA (Flett et al., 1995; Frost et al., 1991; Kawamura et al., 2002; Vieth & Trull, 1999). Nonetheless, the correlational designs of these studies prevent causal inferences. Furthermore, as some of these studies relied on individuals retrospectively reporting the perceived harshness and authoritarianism of their parents, this may have introduced bias into the data.

Based on the research on parenting, Flett, Hewitt, Oliver, and Macdonald (2002) put forward a model of the aetiology of perfectionism, expressed in terms of SPP, SOP and OOP. It is interesting that this model not only considers parenting

factors but also makes propositions about the role of the environment and the child in the development of perfectionism. This model is depicted in Figure 2.

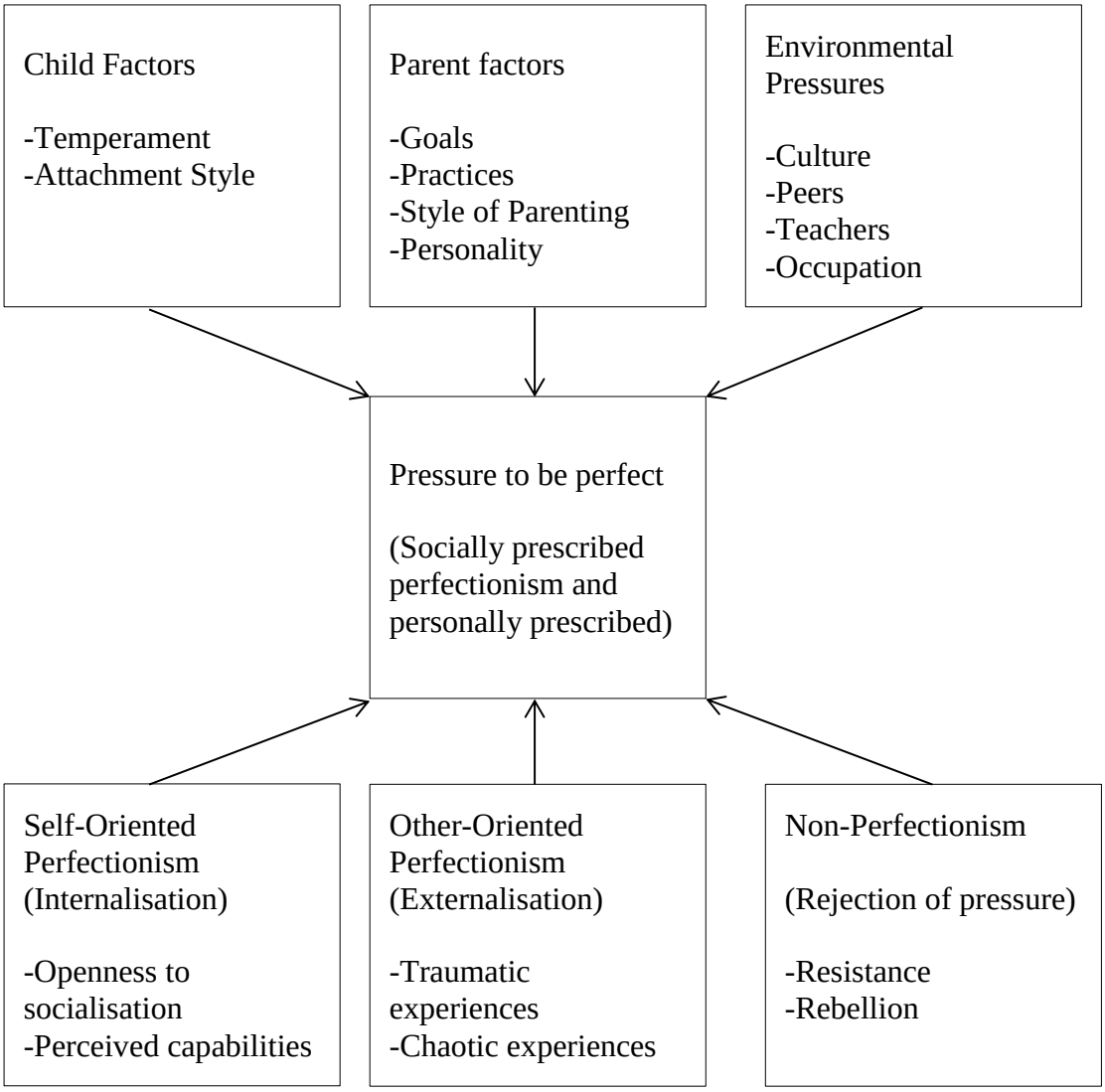

Figure 2. Preliminary model of the development of perfectionism (reproduced from Flett et al., 2002)

Flett et al.'s (2002) model posits that three types of risk factors can place perfectionistic pressures upon an individual: parent factors, environmental pressures, and child factors. In regard to parent factors, a child may acquire perfectionism upon exposure to authoritarian parents who behave in ways that promote perfectionism, such as putting their child in environments that accentuate meeting standards.

Perfectionism may also develop upon exposure to a parent who articulates high personal standards, performance-related goals and models perfectionist behaviours. In reference to environmental pressures, a child may acquire perfectionism from being raised in societal contexts that promote attaining certain standards, as well as being in competitive school and work contexts that foster social comparison. In regard to child factors, a child is more likely to develop perfectionism if they have a greater openness to socialisation and therefore internalise parental and societal values to a greater extent. Additionally, a child with a temperament characterised by elevated emotionality and high persistence may be more likely to acquire perfectionism (Flett et al., 2002).

Flett et al.'s (2002) model posits that in the presence of such pressure to be perfect, whether an individual actually develops perfectionism and the type of perfectionism they develop is contingent on additional factors. In a child with greater openness to socialisation and ability to achieve, the pressure to be perfect may lead to SOP. In a child who is capable, but has undergone trauma in a chaotic environment, the pressure to be perfect may lead to OOP. It is possible however, for a child to reject the pressure to be perfect that is placed upon them and consequently not develop perfectionism.

While Flett et al.'s (2002) model considered a number of factors that may be involved in the aetiology of perfectionism, most of the factors with the exception of parenting and modelling have a very limited evidence base to support them. Moreover, there have not been any studies that have provided an empirical test of the whole model, thus there is a need for additional research to support the validity of this model. Another critique of Flett et al.'s (2002) model is that it does not specify factors that would contribute to the maintenance of SOP or OOP once it is acquired.

Studies have continued to test smaller models of the relationships between parenting and specific dimensions of perfectionism (Cook & Kearney, 2009; Soenens et al., 2005; Soenens et al., 2008). Cook and Kearney (2009) found that mothers' SOP was significantly associated with sons' SOP and that this relationship was completely mediated by maternal obsessive-compulsive symptoms. The authors contended that this relationship may have emerged because mothers who have perfectionism and anxiety symptoms may model perfectionism. These mothers may also impart information about the necessity of being cautious and responsible and the consequences of being uncertain and making errors (Cook & Kearney, 2009).

Soenens et al. (2005) reported significant relationships between mothers' and daughters' PS scores as well as fathers' and daughters' PS scores. Significant direct associations also occurred between mothers' and daughters' CM and DA scores, but not fathers' and daughters' CM and DA scores. Soenens et al. (2005) then tested a mediational model in which psychological control mediated the intergenerational transmission of CM and DA. Psychological control is a parenting style in which parents use methods such as the withdrawal of affection or the induction of guilt to coerce a child into meeting their personal standards (Barber, 1996; Soenens et al., 2005). Support was obtained for a model in which psychological control fully mediated the associations between parents' CM and DA and daughters' CM and DA. The authors argued that these findings suggest that the direct association between the CM and DA of mothers and daughters is completely mediated by the mother employing psychological control (Soenens et al., 2005). The studies by Soenens et al. (2005) and Cook and Kearney (2009) are commended for examining mediators of the intergenerational transmission of perfectionism; however, the cross-sectional

nature of the studies still prevents inferences of causality. Longitudinal studies are required to enable inferences about the direction of effects.

One of the only longitudinal studies to examine the relationship between parenting and perfectionism was conducted by Soenens et al. (2008). Soenens et al. found in a sample of mixed gender that both adolescents' and parents' ratings of psychological control on the Psychological Control Scale (Barber, 1996) significantly predicted adolescents' CM and DA one year later. This emerged after having accounted for baseline levels of CM and DA. This finding provided evidence that psychological control is a risk factor for the development of elevated CM and DA (Soenens et al., 2008). Additional longitudinal studies, ideally those that follow children from birth, are needed to make inferences about the variables that are risk factors for the development of perfectionism.

Studies have indicated that genetic factors may at least partially influence the aetiology of perfectionism (Lilenfeld et al., 2000; Rector, Cassin, Richter, & Burroughs, 2009; Woodside et al., 2002). Lilenfeld et al. (2000) found that the first degree relatives of individuals with bulimia nervosa had significantly higher EDI-P, CM, PC and total FMPS compared to the first-degree relatives of women without eating disorders. Woodside et al. (2002) reported that mothers of women with anorexia nervosa had significantly higher CM, PC and total FMPS compared to the mothers of women without an eating disorder. Rector et al. (2009) found that the first degree relatives of individuals with early-onset obsessive-compulsive disorder had significantly higher scores on OBQ-PC compared to the relatives of individuals without obsessive-compulsive disorder. As dimensions of perfectionism such as EDI-P, CM and OBQ-PC are associated with eating disorders and/or obsessive-compulsive disorder symptoms (e.g., Bardone-Cone et al., 2007; Manos et al., 2010),

the findings of first-degree relatives also having elevated levels of these dimensions support notions of perfectionism being at least partially genetically transmitted (Lilenfeld et al., 2000; Rector et al., 2009; Woodside et al., 2002). Nevertheless, these studies cannot disentangle the relative contribution of genes and shared environment to these dimensions of perfectionism.

Twin studies have provided support for both genetic and environmental components being involved in the aetiology of perfectionism as measured by EDI-P, CM, PS and DA. These studies have also enabled estimates of how much genetic and environmental components contribute toward these perfectionism dimensions (Kamakura, Ando, Ono, & Maekawa, 2003; Tozzi et al., 2004; Wade & Bulik, 2007). In these twin studies, the correlations between monozygotic twins on EDI-P, CM, PS and DA were compared to those of dizygotic twins. Following this, models of components of variance (additive genetic components, specific environment and shared environment) were specified. Statistical programs were then utilised to fit these models to the data and estimate the proportion of variance in the perfectionism measure accounted for by genetic and environmental factors (Kamakura et al., 2003; Tozzi et al., 2004; Wade & Bulik, 2007).

In Kamakura et al.'s (2003) study of 162 Japanese adult female twins, the correlations between monozygotic twins on EDI-P were significantly higher than that of dizygotic twins. Thirty-seven per cent of the variance in EDI-P was accounted for by additive genetic components and 66 per cent was accounted for by environmental factors (Kamakura et al., 2003). In Tozzi et al.'s (2004) study of 1022 American adult female twins, the correlations between monozygotic twins on CM, PS and DA were higher than the correlations between dizygotic twins, leading the authors to argue that perfectionism has moderate heritability. Additive genetic

factors accounted for 29 per cent of the variance in CM, 42 per cent of the variance in PS and 32 per cent of the variance in DA; whereas environmental factors accounted for 60 per cent of the variance in CM, 58 per cent of the variance in PS and 68 per cent of the variance in DA. Wade and Bulik (2007) utilised a sample of 4268 Australian adult twins and found greater correlations between monozygotic twins on CM, PS and DA relative to dizygotic twins. Additive genetic factors accounted for 39 per cent of the variance in CM, 36 per cent of the variance in PS and 27 per cent of the variance in DA. Environmental factors accounted for 61 per cent of the variance in CM, 64 per cent of the variance in PS and 73 per cent of the variance in DA.

These studies support the perfectionism dimensions of EDI-P, CM, PS and DA having genetic and environmental components, with the environmental component being larger than the genetic component. The latter two studies are particularly robust due to the large sample sizes. Furthermore, all three studies used reputable statistical procedures to estimate the contribution of genetic and environmental components, which indicates that these findings are reliable (Kamakura et al., 2003; Tozzi et al., 2004; Wade & Bulik, 2007).

In sum, while Flett et al.'s (2002) model of the aetiology of perfectionism considered many risk factors for the development of perfectionism, a review of the evidence suggests that the main factor with empirical support is parenting (e.g., Soenens et al., 2008). Although not specified in Flett et al.'s (2002) model, there is evidence from family and twin studies to support genetic factors also being involved in the aetiology of perfectionism dimensions such as EDI-P, OBQ-PC, CM, PS and DA (Kamakura et al., 2003; Lilenfeld et al., 2000; Rector et al., 2009; Tozzi et al.,

2004; Wade & Bulik, 2007; Woodside et al., 2002). There is a need for additional research on the aetiology of perfectionism.

1.4. The Transdiagnostic Approach

For decades researchers adopted a disorder-focus approach where the emphasis was on examining the cognitive and behavioural mechanisms that underpinned a specific disorder (Harvey, Watkins, Mansell, & Shafran, 2004). This was based on the premise that the processes responsible for the onset and maintenance of psychological disorders are significantly different in each disorder (Mansell, Harvey, Watkins, & Shafran, 2009). While this approach resulted in increased knowledge of specific disorders and the promulgation of evidence-based treatments for specific disorders, it became apparent that many of the behavioural and cognitive mechanisms that played a role across psychological disorders were similar (Craske, 2012; Harvey et al., 2004). This resulted in groups of researchers beginning to explore the value of changing from a disorder-focus orientation to an across-disorder or 'transdiagnostic' orientation (Harvey et al., 2004, p.1). Fairburn et al. (2003) applied this transdiagnostic orientation to the conceptualisation of eating disorders by arguing that common cognitive and behavioural constructs, one being clinical perfectionism, were directly implicated in the maintenance of anorexia nervosa, bulimia nervosa and atypical eating disorders. Harvey et al. (2004) asserted that certain behavioural and cognitive constructs responsible for the onset or maintenance of symptoms of a psychological disorder are shared across disorders. Such constructs were labelled transdiagnostic processes (Harvey et al., 2004).

Harvey et al. (2004) and Mansell, Harvey, Watkins, and Shafran (2008) outlined three benefits of the transdiagnostic approach. First, the proposition of transdiagnostic processes being shared across disorders may offer a plausible

explanation for the high degree of co-morbidity of psychological disorders (Kessler, Chiu, Demler, & Walters, 2005). Second, the transdiagnostic approach may assist researchers to generalise information about the maintenance processes of well-researched disorders to other disorders that are not yet well understood (Harvey et al., 2004; Mansell et al., 2008). The third and perhaps greatest advantage of the transdiagnostic approach is that treatments that focus specifically on a transdiagnostic process have the potential to concurrently ameliorate the symptoms of multiple psychological disorders (Fairburn et al., 2003; Harvey et al., 2004; Mansell et al., 2008). In support of the transdiagnostic approach, comprehensive reviews have provided evidence for many aspects of cognition and behaviour being transdiagnostic processes, some of which include thought suppression, selective attention and repetitive negative thinking (Harvey et al., 2004; Mansell et al., 2009).

Notwithstanding the proposed benefits of the transdiagnostic approach, this approach is also subject to critique. The most salient challenge to the validity of the transdiagnostic approach is that it does not answer the question of why psychological disorders differ in their presentation. If psychological disorders share transdiagnostic processes, one would expect their presentations to be more similar than they are (Mansell et al., 2008). Mansell et al. (2008) provided three possible explanations for the differing presentation of psychological disorders. First, a person's present area of concern will be the determinant of how a transdiagnostic process expresses itself as psychological symptoms. For example, the transdiagnostic process of hypervigilance may express itself as hypervigilance for panic symptoms in panic disorder and hypervigilance for threat in generalised anxiety disorder (Harvey et al., 2004; Mansell et al., 2008). Second, transdiagnostic processes may exist to different extents in different disorders, which may explain the different presentations of

disorders. Third, in addition to shared transdiagnostic processes, disorders may have processes that are specific to that disorder, which may explain why different disorders present differently (Mansell et al., 2008). While Mansell et al. (2008) reviewed evidence to support each of these propositions, it is to be acknowledged the evidence is preliminary and sufficiently more evidence is needed to support these propositions.

Overall, while the transdiagnostic approach is very promising, it is still a recent approach with many questions to be answered. Additional research needs to be done to garner further support for the validity of the transdiagnostic approach (Harvey et al., 2004; Mansell et al., 2008). It is important to note that the transdiagnostic approach does not necessarily need to be seen as mutually exclusive to a disorder-specific approach, it may be a complementary approach (Mansell et al., 2009). Mansell et al. (2009) purported that both the transdiagnostic and disorder-specific approaches may be valuable based on the notion that transdiagnostic and disorder-specific processes may underpin different psychological disorders and the way in which these disorders present in certain individuals. Future research is needed to explore this (Mansell et al., 2009).

1.5. Perfectionism Posited to be a Transdiagnostic Process

Egan et al. (2011) declared that perfectionism can be regarded as a transdiagnostic process. This was based on three arguments. First, there is an increasing body of literature highlighting that dimensions of perfectionism are associated with the onset, severity and maintenance of multiple psychological disorders. These disorders include depressive disorders, bi-polar I and II disorder, anxiety disorders, obsessive-compulsive and related disorders, feeding and eating disorders, as well as certain personality disorders (Egan et al., 2011). Second, there is

evidence consistent with the notion of perfectionism explaining the high co-morbidity of psychological disorders (Bieling, Summerfeldt, Israeli, & Antony, 2004; Brown, Campbell, Lehman, Grisham, & Mancill, 2001; Egan et al., 2011; Kessler, Chiu, et al., 2005). Third, dimensions of perfectionism have been shown to impede the outcome of interventions for certain psychological disorders (Egan et al., 2011). The evidence upon which these arguments are based is described in detail in the proceeding sections. The greatest implication of perfectionism being a transdiagnostic process is that interventions that focus on perfectionism may concurrently decrease the symptoms of multiple psychological disorders (Bieling et al., 2004; Egan et al., 2011; Fairburn et al., 2003; Harvey et al., 2004).

1.5.1. The role of perfectionism in psychological disorders.

1.5.1.1. Depressive disorders. The association between perfectionism and depression has been frequently reported in non-clinical and clinical studies (Egan et al., 2011). Studies of student samples have reported associations between CPQ scores, CM, DA, PE, PC and SPP with depression symptoms (Bieling, Israeli, et al., 2004; Chang & Sanna, 2012; Flett, Hewitt, Blankstein, & O'Brien, 1991; Minarik & Ahrens, 1996; Steele, O'Shea, Murdock, Karney, & Wade, 2009; Wyatt & Gilbert, 1998). There is mixed support for SOP being associated with depression symptoms, as some studies have found that SOP was related to depression symptoms (Flett, Hewitt, Blankstein, & Mosher, 1995), whereas other studies have not (Flett et al., 1991; Wyatt & Gilbert, 1998). As these findings emerged from studies using cross-sectional designs, causal inferences cannot be made. However, Flett, Hewitt, Blankstein et al. (1995) followed their cross-sectional research with prospective research and found that SOP was a prospective predictor of depression three months later. This provides evidence for SOP being a risk factor for the onset of depressive

symptoms. Nevertheless, the non-clinical sample prevents generalisation to clinical populations with depression.

Studies in clinical samples have reported that individuals with depression score significantly higher on SOP, SPP (Hewitt & Flett, 1991b; Enns, Cox, & Borger, 2001; Wheeler, Blankstein, Antony, McCabe, & Bieling, 2011), CM, PS, DA, PC, total FMPS (Enns et al., 2001; Gelabert et al., 2012; Sassaroli et al., 2008; Wheeler et al., 2011) and DAS-SC (Batmaz, Kaymak, Soygur, Ozalp, & Turkcapar, 2013) compared to non-depressed controls. While these studies highlight significant associations between these perfectionism variables and depression that can be generalised to clinical samples, the cross-sectional designs of the studies prevent the direction of effect being ascertained.

Additional cross-sectional studies in clinical samples have provided evidence of SOP, SPP, CM and total FMPS predicting current depressive symptoms (Enns & Cox, 1999; Enns et al., 2001; Gelabert et al., 2012; Hewitt & Flett, 1993; Wheeler et al., 2011). Hewitt and Flett (1993) found in a sample with mixed diagnoses that SOP and SPP predicted depression scores on the Beck Depression Inventory (BDI; Beck & Steer, 1987) in the context of achievement-related stress. In a depressed sample, however, SOP predicted depression symptoms in situations of achievement-related stress, whereas SPP predicted depression symptoms in situations of interpersonal stress. Enns and Cox (1999) found that SPP and CM were significantly related to BDI scores in a depressed sample after controlling for extroversion and neuroticism; whereas Enns et al. (2001) demonstrated that SPP significantly predicted BDI scores in a depressed sample after controlling for extraversion and rumination. Wheeler et al. (2011) found that CM and MEC each significantly predicted depression scores on the Depression, Anxiety and Stress Scale-21 (DASS-21; Lovibond & Lovibond,

1995) in a clinical sample with mixed diagnoses. Gelabert et al. (2012) demonstrated that high CM was a significant positive predictor of a post-partum depression diagnosis, with this variable being related to a four-fold increase in the likelihood of post-partum depression after accounting for neuroticism, psychiatric history and a specific genotype combination.

Collectively, these cross-sectional studies provide support for SOP, SPP, CM and MEC predicting current depressive symptoms across multiple clinical samples, which promotes generalisation to depressed populations (Enns & Cox, 1999; Enns et al., 2001; Gelabert et al., 2012; Hewitt & Flett, 1993; Wheeler et al., 2011). In many of these studies the relationships emerged after controlling for confounds, which provides greater support for the uniqueness of these relationships. Nevertheless, the cross-sectional designs of these studies prevent inferences of causality. To determine the direction of effect between these perfectionism dimensions and depression, studies utilising longitudinal designs are needed.

Prospective studies conducted in mixed and clinical samples have provided support for SOP, SPP and DAS-SC prospectively predicting depression onset (Dunkley, Sanislow, Grilo, & McGlashan, 2006; 2009; Hewitt, Flett, & Ediger, 1996). Hewitt et al. (1996) found that under circumstances of achievement-related stress, SOP was a significant positive predictor of depressive symptoms on the BDI (Beck & Steer, 1987) four months later in a sample with chronic unipolar or bipolar depression after controlling for initial depression. SPP also predicted BDI scores four months later in this sample. Dunkley et al. (2006) found that DAS-SC was a significant positive predictor of BDI-II scores three years later in a clinical sample with mixed diagnoses after controlling for baseline depression and neuroticism. The mediators of this relationship were an avoidant coping style, negative social

encounters and negative perceptions of support from others. Dunkley et al. (2009) reported that DAS-SC scores significantly predicted self-report and interviewer-assigned depression, as well as functional impairment in broad psycho-social domains four years later, after controlling for baseline depression and neuroticism. A mediator of this relationship was negative perceptions of support from others. The findings of these prospective studies are important as they provide support for SOP, SPP and DAS-SC being risk factors for the onset of depression, which can be generalised to depressed populations (Dunkley et al., 2006; 2009; Hewitt et al., 1996). Additionally, these studies controlled for confounds such as initial level of depression. Moreover, Dunkley et al.'s (2006; 2009) studies assessed depressive symptoms up to four years later and examined mediators of this relationship. Thus, there is reliable evidence for SOP, SPP and DAS-SC being prospective factors in depressive symptom onset (Dunkley et al., 2006; 2009; Hewitt et al., 1996).

Studies have also supported SOP being associated with the maintenance of depression (Enns & Cox, 2005; Hewitt, Flett, Ediger, Norton, & Flynn, 1998). Hewitt, Flett, et al. (1998) found that SOP significantly predicted the chronicity of unipolar depression in a clinical sample after controlling for current state depression levels and the chronicity of bipolar symptoms. While this study highlights an association between SOP and the persistence of depression, with findings that can be generalised to clinical samples; the cross-sectional design prevents causal inferences. Enns and Cox (2005) conducted a prospective study and found that SOP interacted with achievement-related life events to significantly predict the non-remission of depressive symptoms in depressed outpatients at 1-year follow-up. The findings of this study support SOP prospectively predicting the maintenance of depression under

circumstances of achievement-related stress, with the clinical sample enabling findings to be generalised to depressed adult populations.

In sum, there is evidence from cross-sectional studies conducted in clinical samples of SOP, CM, PS, SPP, DA, PC, total FMPS and DAS-SC being associated with depressive symptoms (Batmaz et al., 2013; Enns & Cox, 1999; Enns et al., 2001, Gelabert et al., 2012; Hewitt & Flett, 1993; Sassaroli et al., 2008; Wheeler et al., 2011) with findings that can be generalised to clinically depressed populations, but not enabling inferences of causality. The findings from prospective studies in clinical samples provide stronger support for SOP, SPP and DAS-SC being risk factors for the onset of depression (Dunkley et al., 2006; 2009; Hewitt et al., 1996), with SOP also being involved in the maintenance of depression (Enns & Cox, 2005; Hewitt, Flett, et al. 1998).

1.5.1.2. Bipolar and related disorders. There is only a small body of research on the associations between specific dimensions of perfectionism and bipolar symptoms. Significantly higher DAS-SC scores have been obtained by individuals with current or previous bipolar I disorder relative to healthy controls (Goldberg, Gerstein, Wenze, Welker, & Beck, 2008; Scott, Stanton, Garland, & Ferrier, 2000), as well as by adults with bipolar I or II disorder relative to controls (Batmaz et al., 2013). Goldberg et al. (2008) also found evidence of DAS-SC scores being significantly related to manic symptom severity as measured by the Cognitive Checklist-Revised (Beck, Colis, Steer, Madrak, & Goldberg, 2006). While these studies support a relationship between DAS-SC scores and bipolar symptoms that can be generalised to clinical samples with bipolar disorder, the cross-sectional design of these studies prevent inferences being made about the direction of cause and effect.

Prospective studies have provided mixed support for a perfectionist cognitive style being related to the onset of bipolar symptoms (Alloy et al., 2009; Francis-Raniere, Alloy, & Abramson, 2006). Francis-Raniere et al.'s (2006) study suggested that a perfectionist cognitive style was associated with the onset of bipolar symptoms in the context of cognitive-style congruent life events (Francis-Raniere et al., 2006). Francis-Raniere et al. (2006) assessed the cognitive styles of individuals with bipolar II disorder and cyclothymia through administering the subscales of the Dysfunctional Attitudes Scale (Weissman & Beck, 1978), the Depressive Experiences Questionnaire (DEQ; Beck, 1976) and the Sociotropy Autonomy Scale (SAS; Beck, Epstein, Harrison & Emery, unpublished, in Francis-Raniere et al., 2006). Factor analyses of these measures identified four factors, one of which included a self-criticism/performance evaluation factor. This factor depicted a cognitive style typified by a focus on performance, elevated autonomy and heightened self-criticism. Self-criticism/performance evaluation significantly predicted increased hyper-manic symptoms four months later in the context of cognitive-style congruent positive events. This cognitive style also significantly predicted increased depressive symptoms four months later in the context of cognitive-style congruent negative events. These relationships emerged after controlling for baseline symptoms and number of life events. The findings of this prospective study are consistent with a perfectionist cognitive style being involved in the onset of bipolar symptoms in the context of cognitive-style congruent life events (Francis-Raniere et al., 2006).

Alloy et al.'s (2009) prospective study reported different findings to those of Francis-Raniere et al. (2006). Alloy et al. (2009) examined whether each measure that comprised the self-criticism/performance evaluation factor individually predicted bipolar symptoms over 3.2 years. Only DEQ-self-criticism and SAS-

autonomy were significant positive predictors of manic/hypomanic episodes, whereas SAS-autonomy was a significant negative predictor of depressive episodes after accounting for past mood episodes and baseline symptoms. DAS-SC scores did not significantly predict increased manic/hypomanic or depressive episodes. The findings of Alloy et al.'s (2009) and Francis-Raniere et al.'s (2006) prospective studies are difficult to reconcile; however, one possibility may be that a cognitive style including perfectionism may only predict bipolar symptoms under circumstances of cognitive-style congruent events; without these events, a cognitive style including perfectionism may not have predictive utility in bipolar symptoms. Additional prospective studies are needed to clarify this issue.

There is evidence from one cross-sectional study of SPP and OOP being associated with the maintenance of bipolar symptoms (Hewitt, Flett, et al., 1998). Hewitt, Flett, et al. (1998) reported in a clinical sample that SPP and OOP were significant positive predictors of the chronicity of bipolar symptoms and that this relationship remained after accounting for state depression and chronic unipolar depression symptoms. This provides support for SPP and OOP being related to the non-remission of bipolar symptoms; however, the cross-sectional design of this study prevents causal inferences.

In sum, there is evidence from cross-sectional studies of DAS-SC being associated with bipolar symptoms (Batmaz et al., 2013; Goldberg et al., 2008; Scott et al., 2000). Prospective studies have provided mixed support for a perfectionist cognitive style being involved in the onset of bipolar symptoms, with one possibility being that this style is only involved in the onset of bipolar symptoms under circumstances of cognitive-style congruent events (Alloy et al., 2009; Francis-Raniere et al., 2006). One cross-sectional study has also reported SPP and OOP

being associated with the maintenance of bipolar symptoms (Hewitt, Flett, et al., 1998). Additional research using prospective studies is needed to further inform this area.

1.5.1.3. Suicidal ideation, self-harm and suicidal behaviour. Studies in student samples have consistently reported associations between SPP, CM, DA and total FMPS with suicidal ideation; however, there is mixed support for the association between SOP and suicidal ideation (Adkins & Parker, 2006; Blankstein, Lumley, & Crawford, 2007; Dean, Range, & Goggin, 1996; Hamilton & Schweizer, 2001; Hewitt, Flett, & Weber, 1994). Individuals who endorsed experiencing suicidal ideation obtained higher total FMPS, CM and DA than those without suicidal ideation (Hamilton & Schweizer, 2001). CM and DA were also significantly correlated with suicidal ideation and CM was correlated with having made a suicide plan in the past year (Adkins & Parker, 2006). Hewitt, Flett, & Weber (1994) reported that individuals with moderate or high suicidal ideation had significantly higher SOP and SPP than those with low suicidal ideation. SOP and SPP also significantly predicted suicidal ideation in situations of life stress. Dean et al. (1996) found that SPP significantly predicted suicidal ideation after accounting for hopelessness and depression, but did not measure SOP. Blankstein et al. (2007) reported that SPP significantly predicted suicidal ideation, but SOP did not.

The evidence from these studies in student samples suggests that CM, DA, total FMPS and SPP are significantly associated with suicidal ideation, with mixed support for SOP being associated with suicidal ideation (Adkins & Parker, 2006; Blankstein et al., 2007; Dean et al., 1996; Hamilton & Schweizer, 2001; Hewitt, Flett, & Weber, 1994). Each of these studies used large sample sizes, which enables generalisation to student populations; however, the cross-sectional designs of these

studies prevent causal inferences and results cannot be generalised to clinical populations. O'Connor et al. (2010) conducted a prospective study in a student sample and found that SPP significantly predicted self-harm in adolescents under circumstances of life stress. Due to the stronger design, these findings support SPP being a risk factor for self-harm among adolescent students; nonetheless, these findings do not generalise to clinical samples.

Cross-sectional studies in clinical samples have consistently reported associations between SPP and suicidal ideation, self-harm and suicide attempts; however, there is mixed evidence for the associations between SOP and OOP with suicidal ideation and self-harm (Hewitt, Flett, & Weber, 1994; Hewitt, Norton, Flett, Callander, & Cowan, 1998; Hunter & O'Connor, 2003; Rasmussen, O'Connor, & Brodie, 2008). Hewitt, Flett, and Weber (1994) found in a psychiatric sample that individuals with moderate or high suicidal ideation scored significantly higher on SPP and SOP than individuals with low or no suicidal ideation. SPP and SOP each significantly contributed to discriminating between groups after accounting for hopelessness and depression. Hunter and O'Connor (2003) reported significantly greater SPP in patients hospitalised for self-harm relative to controls, with SPP significantly contributing to discriminating between groups after accounting for hopelessness, anxiety and depression; however there were no significant results for SOP.

Rasmussen et al. (2008) found that SPP but not SOP significantly predicted suicidal ideation in a sample hospitalised for self-harm, with a moderator of this relationship being high levels of over-general positive memory recall. Hewitt, Norton, et al. (1998) found in a sample with alcohol dependence that adults who had attempted suicide had significantly higher SPP compared to adults who had not

attempted suicide. SPP and OOP significantly contributed to discriminating between groups after accounting for depression and social hopelessness. Thus, there is consistent support for SPP and mixed support for SOP being related to suicidal ideation, self-harm and suicide attempts in clinical samples (Hewitt, Flett, & Weber, 1994; Hewitt, Norton, et al., 1998; Hunter & O'Connor, 2003; Rasmussen et al., 2008). While these findings can be generalised to clinical populations, the cross-sectional nature of these studies does not enable inferences about the direction of effect.

Prospective studies in clinical samples have supported DAS-SC and SPP being risk factors for suicidal ideation (Beevers & Miller, 2004; O'Connor et al., 2007). Beevers and Miller (2004) reported that depressed inpatients' DAS-SC scores significantly predicted their suicidal ideation level six months after discharge, after accounting for baseline depression and baseline suicidal severity. This association was not mediated by hopelessness (Beevers & Miller, 2004). O'Connor et al. (2007) found that in individuals with a repetitive self-harm history who had recently self-harmed with suicidal intent, high SPP attenuated the relationship between positive future thinking and lowered suicidal ideation two months later. In individuals with low SPP, high positive future thinking on a future thinking task (MacLeod, Pankhania, Lee, & Mitchell, 1997) was significantly related to lowered suicidal ideation two months later. For participants with high SPP there was no significant relationship between high positive future thinking and lowered suicidal ideation two months later (O'Connor et al., 2007). The findings of these prospective studies support DAS-SC and SPP being risk factors for suicidal ideation and such findings can be generalised to clinical samples (Beevers & Miller, 2004; O'Connor et al.,

2007). Additional prospective studies in clinical samples are needed to investigate the role of other perfectionism constructs (e.g., CPQ, CM, DA) in suicidal ideation.

1.5.1.4. Feeding and eating disorders. Comprehensive reviews have reported that certain dimensions of perfectionism are not only associated with eating disorder symptoms in non-clinical and clinical samples, but dimensions such as SOP, PS, CM, DA and EDI-P are risk factors and/or maintenance factors for eating disorders (Bardone-Cone et al., 2007; Egan et al., 2011; Lilenfeld et al., 2006; Stice, 2002). It is interesting that SOP, PS and CM are implicated in the onset and maintenance of eating disorders as these dimensions most closely align with Shafran et al.'s (2002) definition of clinical perfectionism.

Studies in non-clinical samples have consistently reported associations between SOP and eating-disordered attitudes and behaviours; however, there is mixed support for SPP being associated with eating disorder symptoms (Bardone-Cone, 2007; Fitzsimmons-Craft, Bardone-Cone, Brown-Stone, & Harney, 2012). Bardone-Cone (2007) found that female students reporting high levels of bulimic symptoms had significantly greater SOP and SPP than those with low levels of bulimic symptoms. SOP was a significant predictor of bulimic symptoms after controlling for negative affect, whereas SPP was not. Bardone-Cone (2007) also reported that females engaging in high levels of dieting had significantly higher SOP than those engaging in low levels of dieting and found that SOP significantly predicted dieting. Fitzsimmons-Craft et al. (2012) discovered that both SOP and SPP significantly predicted binge-eating in female students. Joyce, Watson, Egan, and Kane (2012) reported in a community sample that a SOP dimension derived from a factor analysis of the EDI (Sherry, Hewitt, Besser, McGee, & Flett, 2004) was significantly associated with eating disorder symptoms on the Eating Disorders

Examination Questionnaire (Fairburn & Beglin, 1994), with this association being mediated by conditional goal setting and over-valuation of shape and weight (Joyce et al., 2012).

There is also support for CM, DA and O being significantly associated with body dissatisfaction (Wade & Tiggemann, 2013). Wade and Tiggemann (2013) examined data from a twin study involving 1083 women and found that heightened CM and O significantly predicted a lower desired Body Mass Index (BMI) after having controlled for current BMI. Wade and Tiggemann (2013) also found that heightened CM, O and DA significantly predicted a smaller ideal silhouette. This study utilised a large sample size, which promotes generalisation to female twins; however, studies should also examine this in a non-twin sample.

Overall, these studies provide support for SOP, CM, DA and O being associated with eating disordered attitudes and behaviours in non-clinical samples, with some support for SPP being related to eating pathology (Bardone-Cone, 2007; Fitzsimmons-Craft et al., 2012; Joyce et al., 2012; Wade & Tiggemann, 2013). Nevertheless, these studies all used cross-sectional designs, which prevent inferences of causality. The use of non-clinical samples also prevents generalisation to eating disorder populations.

Studies utilising experimental designs have provided stronger support for PS, CM and DA being aetiologically involved in eating disorder symptoms in non-clinical samples (Boone, Soenens, Vansteenkiste, & Braet, 2012; Shafran, Lee, Payne, & Fairburn, 2006). Shafran et al. (2006) examined the effect of manipulating personal standards upon eating attitudes and behaviour. Forty-one women were randomised to a high personal standards or low personal standards condition, in which they signed a contract to complete all tasks over the following 24 hours to the

highest or the minimal standard respectively. Females randomised to the high personal standards condition had significantly greater ratings on a visual analogue scale of clinical perfectionism (Shafran et al., 2004), engaged in a significantly greater number of attempts to restrict their food intake, consumed significantly less high calorie foods and exhibited significantly greater regret following eating relative to those in the low standards condition (Shafran et al., 2006).

Boone, Soenens, et al. (2012) conducted an extension of this research in which males and females were randomised to a high personal standards condition, a low personal standards condition or a personal standards plus evaluative concerns condition. The first two conditions were as in Shafran et al. (2006), whereas the third condition involved participants signing a contract to complete all tasks over the following 24 hours to the highest standard and ensuring that they did not fail to meet their standards. After the manipulation, individuals in the high personal standards condition, as well as the personal standards plus evaluative concerns condition exhibited significantly greater levels of PS, evaluative perfectionism (CM +DA), and significantly greater restraint and binge-eating relative to individuals in the low personal standards condition. As these studies utilised experimental designs, this enables one to infer that PS, CM and DA are aetiological factors in eating disorder symptoms (Boone, Soenens, et al., 2012; Shafran et al., 2006). Nevertheless, the use of non-clinical samples prevents generalisation to eating disorder populations.

Prospective studies in student samples have provided support for EDI-P and PS interacting with factors such as self-esteem, perceived weight status and body dissatisfaction to prospectively predict bulimic symptoms up to nine months later (Steele, Corsini, & Wade, 2007; Vohs, Bardone, Joiner, Abramson, & Heatherton, 1999; Vohs et al., 2001). Vohs et al. (1999) found that high EDI-P under

circumstances of low self-esteem and high perceived weight status significantly predicted scores on the EDI-Bulimia subscale (Garner et al., 1983) nine months later. This was after accounting for baseline BMI and bulimic symptoms. Vohs et al. (2001) reported that high EDI-P, low self-esteem and high body dissatisfaction significantly predicted EDI-bulimia scores five weeks later. This was after controlling for baseline bulimia, anxiety and depression. Steele et al. (2007) however, found that high PS under circumstances of high self-esteem and high perceived weight status significantly predicted EDI-bulimia scores three months later after accounting for baseline BMI and bulimia scores. As these studies have utilised prospective designs, they provide support for EDI-P and PS being risk factors for bulimic symptoms in situations of high perceived weight status, high body dissatisfaction as well as low and high self-esteem. Additional research is needed to ascertain the levels of self-esteem that place individuals at greater risk of bulimic symptom onset in the context of elevated EDI-P, PS, high perceived weight and high body dissatisfaction (Steele et al., 2007; Vohs et al., 1999; Vohs et al., 2001). Future research should also use clinical samples to promote generalisation of these findings to eating disorder populations.

Studies using clinical samples have found that adults with anorexia nervosa have significantly higher EDI-P, PS, CM, DA, PE, PC, O (Bastiani, Rao, Weltzin, & Kaye, 1995; Halmi et al., 2000; Moor, Vartanian, Touyz, & Beumont, 2004), SOP and SPP (Bastiani et al., 1995; Cockell et al., 2002) relative to controls or population norms. Adults with bulimia nervosa have significantly higher EDI-P, PS, CM, DA, PC, PE, total FMPS (Lilenfeld et al., 2000; Moor et al., 2004), as well as SOP relative to controls (Pratt, Telch, Labouvie, Wilson, & Agras, 2001). A mixed sample of individuals with anorexia nervosa or bulimia nervosa also scored

significantly higher on PS, CM, DA, PC and PE relative to non-clinical controls (Sassoroli et al., 2008).

A limited number of studies have examined perfectionism in individuals with binge-eating disorder or an other-specified feeding or eating disorder (Egan, Shafran, et al., 2014; Lethbridge et al., 2012; Moor et al., 2004). It is important to note that these two eating disorder diagnoses are terms from the DSM-5 (APA, 2013). The DSM-IV-TR (APA, 2000) categorised the symptoms of each of these disorders as eating disorder not otherwise specified (EDNOS), thus research in this area refers to the EDNOS diagnostic category. Moor et al. (2004) found that individuals with EDNOS did not significantly differ on EDI-P compared to controls. However, Lethbridge et al. (2012) reported that a sample who had anorexia nervosa, bulimia nervosa or EDNOS scored significantly higher on SOP compared to non-eating disordered controls. Egan, Shafran, et al. (2014) found that a sample who had bulimia nervosa or EDNOS had significantly higher CPQ scores than controls. In the latter two studies, the mixed nature of the sample may have enabled the individuals with anorexia nervosa and/or bulimia nervosa to inflate the mean SOP or CPQ score, even if individuals with EDNOS did not have elevated SOP or CPQ scores (Egan, Shafran, et al., 2014; Lethbridge et al., 2012). Further research investigating whether EDI-P, SOP and CPQ are elevated in individuals with binge-eating disorder or an other-specified feeding or eating disorder is needed.

In sum, the findings of these studies offer support for EDI-P, PS, CM, DA, PE, PC and SOP being associated with anorexic and bulimic symptoms (Bastiani et al., 1995; Halmi et al., 2000; Lilenfeld et al., 2000; Moor et al., 2004; Pratt et al., 2001) and SPP being associated with anorexic symptoms (Bastiani et al., 1995; Cockell et al., 2002). There is also some evidence of elevated SOP and CPQ scores

in samples with binge-eating disorder or an other-specified feeding or eating disorder (Egan, Shafran, et al., 2014; Lethbridge et al., 2012). Nevertheless, the designs of these studies do not enable causal inferences.

Cross-sectional studies have shown that SOP, PS, CM and DA are associated with the severity of eating disorder symptoms in clinical samples (Bardone-Cone et al., 2008; Boone, Braet, Vandereycken, & Claes, 2012; Egan, Watson, et al., 2013; Lethbridge et al., 2012; Watson, Raykos, Street, Fursland, & Nathan, 2011). SOP has been found to significantly predict eating disorder severity in individuals with anorexia nervosa, bulimia nervosa or EDNOS (Lethbridge et al., 2012), with mediators of this relationship being conditional goal setting, shape and weight over-valuation (Watson et al., 2011) and anxiety (Egan, Watson, et al., 2013). Moreover, evaluative concerns perfectionism (CM and DA) significantly predicted body image concerns among female inpatients with anorexia nervosa, bulimia nervosa or EDNOS (Boone, Braet, et al., 2012). Bardone-Cone et al. (2008) found that in women with current or sub-clinical bulimia nervosa who were vomiting, CM and PS each moderated the relationship between weight/ shape concern and vomiting frequency. Weight/shape concern only had a significant relationship with vomiting frequency in individuals with elevated PS or CM and low self-efficacy. Additionally, in women who were binge-eating, CM moderated the relationship between weight/shape concern and binge eating frequency. Weight/shape concern was only significantly related to binge-eating frequency under circumstances of high CM and low self-efficacy. The findings from these cross-sectional studies support SOP, PS, CM and DA being related to eating disorder severity in clinical samples; however, again, the cross-sectional designs do not enable inferences about the direction of effect (Bardone-Cone et al., 2008; Boone, Braet, et al., 2012; Egan, Watson, et al.,

2013; Lethbridge et al., 2012; Watson et al., 2011). Studies with longitudinal designs are needed to ascertain the temporal order of effects.

Retrospective studies have demonstrated that females with current anorexia nervosa (Fairburn, Cooper, Doll, & Welch, 1999) and current bulimia nervosa (Fairburn, Welch, Doll, Davies, & O'Connor, 1997) reported experiencing greater levels of perfectionism in their childhood relative to females without disorders. The retrospective designs used in these studies enable one to infer that perfectionism is likely to be a risk factor for eating disorder symptoms; however, the data may have been affected by recall biases. The clinical samples enable findings to be generalised to females with anorexia nervosa and bulimia nervosa.

Family and twin studies have suggested that EDI-P, PS, CM and PC are risk factors for eating disorder onset (Lilenfeld et al., 2000; Wade et al., 2008; Woodside et al., 2002). Studies have reported elevated EDI-P, CM, PC and total FMPS in the first degree relatives of individuals with eating disorders compared to the relatives of controls (Lilenfeld et al., 2000; Woodside et al., 2002). In Wade et al.'s (2008) twin study, the co-twins of women with anorexia nervosa had significantly higher PS compared to the co-twins of women without eating disorders. This relationship remained significant after accounting for the temperaments of the women with anorexia nervosa and the control women. These studies suggest that EDI-P, PS, CM and PC may increase an individual's vulnerability to an eating disorder.

Clinical perfectionism has also been posited to be a significant maintaining factor in eating disorders (Fairburn et al., 2003a). Fairburn et al.'s (2003a) transdiagnostic model of eating disorders theorises that clinical perfectionism is one of the four mechanisms that can interact with the primary eating disorder maintenance factors to contribute to the maintenance of an eating disorder in specific

individuals. Fairburn et al. (2003a) claimed that if clinical perfectionism was reduced then "a potent additional network of maintaining mechanisms would be removed thereby facilitating change" (p. 516). Based on this theory, Fairburn et al. (2003a) developed a transdiagnostic treatment called Enhanced Cognitive Behaviour Therapy (CBT-E) to be used with outpatients with an eating disorder. CBT-E not only targets the primary eating disorder maintenance factors, but also includes treatment modules that address clinical perfectionism and three other maintenance factors, which are used when these factors contribute to the persistence of an individual's eating disorder (Fairburn et al., 2003a). Studies have supported the efficacy of CBT-E (Fairburn et al., 2009), as well as the effectiveness of CBT-E in outpatients with eating disorders (Byrne, Fursland, Allen, & Watson, 2011; Dalle Grave, Callugi, Doll, & Fairburn, 2013; Fairburn et al., 2013) and inpatients with eating disorders (Dalle Grave, Calugi, Conti, Doll, & Fairburn, 2013). This evidence of the efficacy and effectiveness of CBT-E in reducing eating disorder symptoms provides support for clinical perfectionism maintaining eating disorder pathology.

Cross-sectional studies have offered support for EDI-P, SOP, SPP and PCI scores being associated with eating disorder maintenance. This is through showing that individuals recovering from eating disorders have similar levels of these perfectionism dimensions to individuals with current eating disorders (Bardone-Cone, Sturm, Lawson, Robinson, & Smith, 2010; Holland, Bodell, & Keel, 2013; Niv, Kaplan, Mitrani, & Shang, 1998; Santonastaso, Friederici, & Favaro, 1999). Niv et al. (1998) found that individuals with current anorexia nervosa and those recovering from anorexia nervosa did not significantly differ on EDI-P; however, both groups had significantly higher EDI-P than controls. Bardone-Cone et al. (2010) reported that females with a current eating disorder diagnosis and females

who were partially recovered did not significantly differ in SOP, SPP and PCI scores; however, their scores on these measures were significantly greater than those of females who had fully recovered and controls. While these findings highlight the associations between EDI-P, SOP, SPP and PCI scores with the maintenance of eating disorder pathology, the cross-sectional designs prevent the direction of effect from being established.

Prospective studies have provided stronger support for EDI-P predicting the maintenance of an eating disorder up to ten years later (Holland et al., 2013; Santonastaso et al., 1999). Santonastaso et al. (1999) found that in 16-year olds who had anorexia nervosa, bulimia nervosa, EDNOS or a partial eating disorder (i.e., abnormal eating behaviours and cognitions), EDI-P significantly predicted eating disorder maintenance at 1-year follow-up. Holland et al. (2013) reported that among 150 participants with an eating disorder at baseline, EDI-P was a significant positive predictor of maintenance of the eating disorder ten years later. Thus, there is support for EDI-P being a factor in the maintenance of eating disorder pathology.

In sum, cross-sectional studies in clinical samples have demonstrated that many dimensions of perfectionism have been associated with eating disorder pathology (Bardone-Cone et al., 2008; Boone, Braet, et al., 2012; Egan, Watson, et al., 2013; Lethbridge et al., 2012; Watson et al., 2011). Importantly, evidence from retrospective, family, twin, intervention and prospective studies have offered support for dimensions of perfectionism such as SOP, PS, CM, PC, DA being onset and/or maintenance factors in eating disorders (Fairburn et al., 1997; Fairburn et al., 1999; Fairburn et al., 2009; Holland et al., 2013; Lilenfeld et al., 2000; Santonastaso et al., 1999; Woodside et al., 2002).

1.5.1.5 Anxiety disorders.

1.5.1.5.1. Social anxiety disorder. Models of social anxiety implicate perfectionism as a factor in the onset and maintenance of social anxiety symptomatology (e.g., Clark & Wells, 1995). Clark and Wells' (1995) model of social anxiety disorder purports that socially anxious individuals possess excessively high standards in relation to social performance (e.g., believing that one must never exhibit weakness), conditional beliefs relating to social evaluation (e.g., if I make a mistake I will be rejected) and unconditional beliefs relating to the self (e.g., I am not acceptable). According to this model, such dysfunctional beliefs lead socially anxious individuals to perceive social situations in a threatening manner (Clark & Wells, 1995).

Perfectionism has also been theorised to maintain the symptoms of social anxiety (Clark & Wells, 1995; Egan et al., 2011; Mansell et al., 2008; Shafran et al., 2002). For example, perfectionist standards for social performance may maintain social anxiety symptoms by interacting with disorder-specific maintenance factors such as self-focussed attention in a social interaction (Clark & Wells, 1995; Egan et al., 2011; Mansell et al., 2008; Shafran et al., 2002). Alternatively, perfectionist cognitive biases of focussing on the negative and discounting the positive aspects of performance may occur in post-event processing of social interactions. This may lead the individual to believe that they have not met their standards for a social interaction, maintaining social anxiety (Clark & Wells, 1995; Shafran et al., 2002).

Studies in student samples have found CM, DA (Saboonchi & Lundh, 1997; Shumaker & Rodebaugh, 2009), SPP (Flett, Hewitt, & DeRosa, 1996) and MEC (DiBartolo, Li, & Frost, 2008) to be related to social anxiety symptoms. There is mixed support for PS being associated with social anxiety symptoms. Some studies

have found that PS is not correlated with social anxiety (Saboonchi & Lundh, 1997), some studies have shown that PS is significantly related to lower social anxiety (Shumaker & Rodebaugh, 2009), and other studies have reported that PS is related to elevated social anxiety, with this relationship disappearing once the overlap between PS and MEC is accounted for (DiBartolo et al., 2008). Nevertheless, causal inferences cannot be made and the use of non-clinical samples prevents the generalisation of findings to clinical populations.

Studies in clinical samples have supported CM, DA, PC and SPP being associated with social anxiety symptoms, with mixed support for SOP being related to these symptoms (Antony, Purdon, Huta, & Swinson, 1998; Juster et al., 1996; Lundh & Ost, 1996; Saboonchi, Lundh, & Ost, 1999; Wheeler et al., 2011). Individuals with social anxiety disorder have reported significantly greater CM, DA, PC (Antony, Purdon, et al., 1998; Juster et al., 1996; Lundh & Ost, 1996; Saboonchi et al., 1999; Wheeler et al., 2011), SOP (Wheeler et al., 2011) and SPP (Antony, Purdon, et al., 1998; Bieling & Alden, 1997; Wheeler et al., 2011) compared to controls. Juster et al. (1996) found that CM and DA were significantly related to social anxiety after controlling for depression. Saboonchi et al. (1999) found that CM and DA were significantly correlated with social anxiety and that the association between DA and social anxiety remained significant after controlling for public self-consciousness. While these studies support associations occurring between CM, DA, PC, SPP and social anxiety, with some support for SOP being related to these symptoms, causal inferences cannot be made from the findings of these studies. Prospective studies are needed to determine the direction of these effects.

Lundh and Ost (2001) posited that if perfectionism played a role in maintaining social anxiety, treatments for social anxiety disorder should result in

decreased perfectionism. In support of this, Lundh and Ost (2001) discovered that CBT for social anxiety simultaneously reduced PS, CM, PC and DA in addition to social anxiety scores. Pre-post treatment change in DA significantly predicted pre-post treatment change in social anxiety after accounting for general psychopathology and pre-treatment social anxiety. Participants who did not respond to the social anxiety intervention commenced the intervention with significantly higher PS, CM and DA scores than those who responded.

Nonetheless, studies attempting to replicate Lundh and Ost's (2001) finding have produced inconsistent results (Ashbaugh et al., 2007; Rosser, Issakidis, & Peters, 2003). Rosser et al. (2003) found that CBT for social anxiety decreased CM and social anxiety, but found that pre-treatment CM was not a significant predictor of treatment outcome beyond pre-treatment social anxiety level. In contrast, Ashbaugh et al. (2007) discovered that CBT for social anxiety resulted in significant decreases in total FMPS, DA and CM and that pre-post treatment change in CM and DA scores were each significant predictors of post-treatment social anxiety scores after accounting for pre-treatment social anxiety. Further research is required to clarify the roles of CM and DA in maintaining social anxiety.

In sum, studies in student samples have offered support for CM, DA, SPP and MEC being associated with social anxiety symptoms, with mixed support for PS being related to these symptoms (DiBartolo et al., 2008; Flett et al., 1996; Saboonchi & Lundh, 1997; Shumaker & Rodebaugh, 2009). In clinical samples, the findings suggest that CM, DA, PC and SPP are associated with social anxiety symptoms, with mixed support for SOP being associated with these symptoms (Antony, Purdon, et al., 1998; Juster et al., 1996; Lundh & Ost, 1996; Saboonchi et al., 1999; Wheeler et al., 2011). There is inconsistent evidence for the role of CM and DA in maintaining

social anxiety (Ashbaugh et al., 2007; Lundh & Ost, 2001; Rosser et al., 2003), thus future research is needed to clarify this.

1.5.1.5.2. Panic disorder with or without agoraphobia. Elevated perfectionism has been theorised to be a risk factor for panic disorder, as well as a risk and maintenance factor for agoraphobia (Ehlers, 1995; Ellis, 2002; Iketani et al., 2002a). It has long been theorised that heightened anxiety sensitivity, or fear about fear, predisposes an individual to experience panic symptoms (Ellis, 1962), with empirical evidence to support this (Ehlers, 1995). Ellis (2002) theorised that perfectionist individuals are likely to have elevated anxiety sensitivity. This is because they possess dichotomous beliefs of needing to be completely free from panic symptoms, which are activated as panic symptoms occur. Iketani et al. (2002a) theorised a role for perfectionism in the development and maintenance of agoraphobia in individuals with panic disorder. This hypothesis arose based on descriptions of individuals who have panic disorder with agoraphobia only being willing to leave their safety zone or engage in certain activities if they were completely certain that panic attacks would not occur.

Despite these theories, few studies have explored the relationships between perfectionism dimensions, anxiety sensitivity, panic and agoraphobia across student and clinical samples. In a student sample, Flett, Greene, and Hewitt (2004) found that SPP and PCI scores were associated with total anxiety sensitivity score on the Anxiety Sensitivity Index-Revised (Taylor & Cox, 1998); however, the findings of this study cannot be generalised to clinical samples. Cox, Enns, Walker, Kjernisted, and Pidlubney (2001) found that SOP was significantly related to anxiety sensitivity in individuals with panic disorder and depression. Nonetheless, from these studies, inferences about the direction of effect cannot be made. There is a need for

additional research, particularly prospective studies utilising clinical samples, to investigate the relationships between perfectionism, anxiety sensitivity and panic disorder symptoms.

The remaining studies in this area have examined whether perfectionism dimensions are elevated in clinical samples with panic disorder (PD) and panic disorder with agoraphobia (PDA) relative to controls (Antony, Purdon, et al., 1998; Frost & Steketee, 1997; Iketani et al., 2002a; 2002b; Saboonchi et al., 1999; Wheeler et al., 2011). These studies have yielded inconsistent findings. Saboonchi et al. (1999) found that participants with PDA had significantly elevated CM and PC compared to controls. Two other studies have reported that individuals with PDA or PD have significantly higher CM (Antony, Purdon, et al., 1998; Frost & Steketee, 1997), PC, total FMPS (Frost & Steketee, 1997) DA and SPP (Antony, Purdon, et al., 1998) compared to non-anxious controls. While Iketani et al. (2002a; 2002b) found that individuals with PDA have significantly higher PS, CM (Iketani et al., 2002a; 2002b) and DA (Iketani et al., 2002a) compared to those with PD and non-anxious controls, and significantly higher PE and PC compared to controls (Iketani et al., 2002a; 2002b); there were no significant differences in perfectionism between individuals with PD and controls. Wheeler et al. (2011) found that a combined sample of individuals with PD and PDA did not significantly differ on any of the FMPS dimensions compared to controls.

Iketani et al. (2002a) stated that the discrepancies between their findings and those of previous research (Antony, Purdon, et al., 1998; Frost & Steketee, 1997) may be because of the different sample compositions across studies. Previous studies have used combined samples of individuals with PDA and PD, which may have enabled the individuals with PDA to impact the outcome. Iketani et al. (2002a;

2002b) however, had separate samples of individuals with PDA and PD. Iketani et al. (2002) asserted that elevated perfectionism may therefore be specific to those with PDA rather than all panic disorder individuals. Consistent with this, Wheeler et al. (2011) stated that their findings of no differences in the FMPS dimensions in their combined sample compared to controls may have been due to the low numbers of individuals with PDA in their sample. Wheeler et al. (2011) contended that a stronger presence of agoraphobia may have been needed for significant findings to emerge.

In further support of an association between perfectionism and agoraphobia, Iketani et al. (2002a) found that total FMPS was a significant positive predictor of agoraphobia after controlling for panic symptoms and age of onset. Every 1-point FMPS increase was associated with a three per cent increase in the odds of experiencing agoraphobia. Iketani et al. (2002a) argued that their findings were consistent with perfectionism dimensions being associated with agoraphobia development and maintenance. Nevertheless, the cross-sectional designs of these studies prevent causal inferences. Research using prospective designs is needed to clarify the role of perfectionism dimensions in panic and agoraphobic symptomatology.

In summary, there is some evidence of SPP and PCI scores being associated with anxiety sensitivity in a student sample (Flett et al., 2004) and evidence of SOP being associated with anxiety sensitivity in a clinical sample (Cox et al., 2001). The clinical research examining whether dimensions of perfectionism are elevated in individuals with PDA and PD compared to controls has yielded inconsistent findings (Antony, Purdon, et al., 1998; Frost & Steketee, 1997; Iketani et al., 2002a, 2002b); however, one explanation may be that elevated PS, CM, DA, PC and PE may be

specific to individuals with PDA, rather than all panic disorder individuals. This, in combination with findings of total FMPS score being related to agoraphobia may suggest a role for perfectionism in agoraphobia development and maintenance (Iketani et al., 2002a, 2002b). Additional research is needed to investigate this possibility.

1.5.1.5.3. Specific phobia. Antony, Purdon, et al. (1998) reported that individuals with specific phobia did not differ on any of the FMPS or HMPS dimensions compared to non-anxious controls. To date, this is the only study that has investigated the association between perfectionism and specific phobia symptoms. This is an under-researched area so there is currently insufficient evidence to make inferences about whether perfectionism has any role in this disorder.

1.5.1.5.4. Generalised anxiety disorder. Few studies have investigated the relationship between dimensions of perfectionism and the symptoms of generalised anxiety disorder (GAD). The only studies that have investigated the associations between the FMPS and HMPS subscales and pathological worry have used student samples (Buhr & Dugas, 2006; Flett, Hewitt, Endler, & Tassone, 1994; Kawamura, Hunt, Frost, & DiBartolo, 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001). Flett et al. (1994) reported that SPP and SOP were significantly correlated with the autonomic arousal and cognitive worry facets of state anxiety as assessed by the Endler Multidimensional Anxiety Scales (Endler, Edwards, & Vitelli, 1991). Nevertheless, when males and females were considered separately, SPP remained related to cognitive worry in both genders; however, SOP was only associated with cognitive worry in females. Buhr and Dugas (2006) discovered that SPP and SOP were each significantly correlated with pathological worry as measured by the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990)

after accounting for gender. SOP still significantly predicted PSWQ after accounting for demographics and intolerance of uncertainty, but SPP did not. This was important as it suggested that SOP explains additional variance in pathological worry to that explained by intolerance of uncertainty, which is an important construct in an established model of GAD (Dugas, Gagnon, LaDouceur, & Freeston, 1998).

Three studies have investigated the associations between the FMPS scales and pathological worry in student samples (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001). These studies each examined whether the FMPS dimensions are uniquely related to pathological worry after controlling for depression and anxiety. Kawamura et al. (2001) found that MEC was significantly correlated with three anxiety factors: social/worry/trait anxiety, post-traumatic stress and obsessive-compulsive symptoms; however, MEC only significantly predicted social/worry/trait anxiety after accounting for depression. PS was only related to post-traumatic stress disorder symptoms and this became non-significant after accounting for depression. Kawamura et al. (2001) asserted that such findings support the association between MEC and social/worry/trait anxiety being important of its own accord and not just emerging due to perfectionism being associated with depression (Enns et al., 2001; Kawamura et al., 2001). Nevertheless, as the composite construct of MEC was used as a measure of perfectionism, one cannot determine which dimensions of MEC are related to social/worry/trait anxiety. Moreover, as pathological worry was part of a composite construct with trait anxiety and social anxiety, one cannot dismiss that the findings may be accounted for by the relationships perfectionism has with social anxiety (e.g., Frost et al., 1990) and trait anxiety (Hewitt & Flett, 1991a) in non-clinical samples.

Stoeber and Joormann (2001) and Santanello and Gardner (2007) separated MEC into smaller composite constructs of CM+DA and PE+PC and assessed whether these constructs, as well as PS, were associated with PSWQ scores. Stoeber and Joormann (2001) reported that CM+DA was significantly related to PSWQ scores after accounting for depression, anxiety and the amount of everyday worries. PE+PC and PS were not significantly related to PSWQ scores (Stoeber & Joormann, 2001). Santanello and Gardner (2007) found that CM+DA was significantly associated with PSWQ scores after partialling out depression, social anxiety and experiential avoidance. PE+PC and PS did not have significant associations with PSWQ scores. Thus, there is evidence to support there being a relationship between CM+DA and pathological worry in student samples (Santanello & Gardner, 2007; Stoeber & Joormann, 2001); however, these findings cannot be generalised to clinical samples with GAD.

To date, there have been no studies examining the relationship between Shafran et al.'s (2002) clinical perfectionism construct and pathological worry across student or clinical samples. Studies have only examined the relationship between CPQ scores and measures of anxiety and stress (Chang & Sanna, 2012; Egan, Shafran, et al., 2014). Egan, Shafran, et al. (2014) reported that students with DASS-anxiety scores in the upper quartile of the sample had significantly higher CPQ scores than students with DASS-anxiety scores in the lower quartile of the sample. Chang and Sanna (2012) found that CPQ scores significantly predicted anxiety scores on the Beck Anxiety Inventory (Beck, Epstein, Brown, & Steer, 1988), as well as stress scores on the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) after controlling for negative affect. While these studies

supported associations between CPQ scores, anxiety and stress, causal inferences cannot be made and findings cannot be generalised to clinical populations.

To date, research has not investigated the relationships between perfectionism dimensions and pathological worry in a sample of individuals with GAD. This is a limitation of the perfectionism literature, particularly when compared to the number of studies that have investigated the relationships between perfectionism dimensions and the symptoms of other psychological disorders (Egan et al., 2011). Furthermore, as gender has been shown to moderate the relationship between perfectionism dimensions and pathological worry (e.g., Flett et al., 1994) and perfectionism dimensions have demonstrated associations with anxiety and depression (Egan et al., 2011), there is a need to investigate the associations between perfectionism dimensions and pathological worry after controlling for gender, depression and anxiety. Evidence of significant associations between perfectionism dimensions and pathological worry after controlling for these confounds would further support perfectionism being a transdiagnostic process (Egan et al., 2011). In Study I of this PhD thesis, the associations between perfectionism dimensions and pathological worry are investigated in individuals with elevated perfectionism and GAD who presented for perfectionism treatment.

Furthermore, while research has examined whether perfectionism dimensions can predict whether individuals have other disorders such as OCD, social phobia and panic disorder with or without agoraphobia (Antony, Purdon, et al., 1998), studies have not examined whether dimensions of perfectionism can predict a principal diagnosis of GAD from a clinical sample with a range of diagnoses. There is a need to investigate this association after controlling for gender and depression (Egan et al., 2011; Flett et al., 1994). In Study I of this PhD thesis, the utility of

perfectionism dimensions in predicting a principal diagnosis of GAD is examined in a clinical sample with elevated perfectionism and a range of diagnoses who presented for perfectionism treatment. Evidence of significant associations between perfectionism dimensions, pathological worry and a principal diagnosis of GAD will provide a rationale for Study II of this thesis and future studies to investigate whether a perfectionism intervention can reduce the symptoms of GAD along with the symptoms of other disorders.

1.5.1.6. Trauma and stressor-related disorders.

1.5.1.6.1. Post-traumatic stress disorder. To date, only one study in a non-clinical sample (Kawamura et al., 2001) and one study in a clinical sample (Egan, Hattaway, & Kane, 2014) have examined the relationships between dimensions of perfectionism and post-traumatic stress disorder (PTSD) symptoms. Kawamura et al. (2001) found that MEC and PS were both significantly associated with a post-traumatic stress factor derived from the Post-Traumatic Stress Disorder Checklist (Weathers, Huska, & Keane, 1991). Only PS was a significant positive predictor of post-traumatic stress after controlling for depression. This highlights a unique association between PS and post-traumatic stress symptoms; however, causal inferences cannot be made and results do not generalise to clinical populations. Egan, Hattaway, et al. (2014) found in a clinical sample of individuals with PTSD following sexual assault that CPQ scores significantly predicted PTSD symptoms and that this was partially mediated by rumination. CM was also a significant positive predictor of PTSD symptoms and this was completely mediated by rumination (Egan, Hattaway, et al., 2014). While the cross-sectional design of this study limits causal inferences, a strength of this study is that findings can be generalised to clinical populations of individuals with PTSD following sexual

assault. There is a need for additional research in this area, particularly studies utilising prospective designs and clinical samples so that questions of whether any dimensions of perfectionism are risk or maintenance factors of PTSD can be examined.

1.5.1.7. Obsessive-compulsive and related disorders.

1.5.1.7.1. Obsessive-compulsive disorder. Perfectionism has been posited to be a key factor in the onset and maintenance of obsessive-compulsive disorder (OCCWG; 1997). A large body of researchers referred to as the Obsessive-Compulsive Cognitions Working Group (OCCWG, 1997) postulated that perfectionism was one of six central beliefs in OCD. They defined perfectionism as "the tendency to believe there is a perfect solution to every problem, that doing something perfectly (i.e., mistake free) is not only possible, but also necessary and that even minor mistakes have serious consequences" (OCCWG, 1997, p.678). The importance of this construct in OCD was further highlighted by these researchers incorporating a perfectionism subscale when developing the OBQ (OCCWG, 2001).

Studies in non-clinical samples support CM, DA, PE and PC being associated with OCD symptoms; with some support for PS and total FMPS also being related to these symptoms (Frost & Shows, 1993; Frost, Steketee, Cohn, & Greiss, 1994; Moretz & McKay, 2009; Rheaume, Freeston, Dugas, Letarte, & LaDouceur, 1995; Wu & Cortesi, 2009). Specifically, individuals with sub-clinical compulsive behaviour have obtained significantly higher scores on PS, CM and DA relative to non-obsessive controls (Frost et al., 1994). DA and CM were also found to have significant relationships with the OCD symptom compulsive indecisiveness (Frost & Shows, 1993). Furthermore, MEC was significantly associated with not just right obsessions and checking behaviours, with this association being completely

mediated by anxiety (Moretz & McKay, 2009). MEC was also found to predict total obsessive-compulsive symptoms as well as washing behaviours, checking behaviours and rituals after controlling for anhedonic depression (Wu & Cortesi, 2009). Total FMPS score significantly predicted obsessive-compulsive symptom severity after accounting for responsibility appraisals (Rheaume et al., 1995).

There is also support in non-clinical samples for OBQ-P, OBQ-PC, SOP and SPP being associated with obsessive-compulsive symptoms (Tolin, Woods, & Abramowitz, 2003; Wu & Cortesi, 2009; Yorulmaz, Karanci, & Tekok-Kilic, 2006). OBQ-P was a significant predictor of ordering symptoms after accounting for social anxiety and depression (Tolin et al. 2003). OBQ-PC significantly predicted total obsessive-compulsive score after controlling for responsibility/threat estimation and anhedonic depression. This subscale also significantly predicted washing, checking and ritualistic behaviours after accounting for anhedonic depression (Wu & Cortesi, 2009). Yorulmaz et al. (2006) reported that SOP and SPP were significantly associated with checking and cleaning behaviours. These associations were all completely mediated by elevated responsibility, with the exception of the relationship between SOP and cleaning, which was only partially mediated by elevated responsibility.

Overall, these studies provide support for associations existing between CM, DA, PE, PC, PS, total FMPS, SOP, SPP, OBQ-P and OCQ-PC with obsessive-compulsive symptoms in non-clinical samples (Frost & Shows, 1993; Frost et al. 1994; Moretz & McKay, 2009; Rheaume et al., 1995; Tolin et al., 2003; Wu & Cortesi, 2009; Yorulmaz et al., 2006). In many of these studies, these associations remained after controlling for various confounds. Nonetheless, the cross-sectional

designs of these studies prevent inferences of causality and findings cannot be generalised to populations who have OCD.

Studies using clinical samples have indicated that adults with OCD have significantly higher scores on CM, DA (Antony, Purdon, et al., 1998, Boisseau, Thompson-Brenner, Pratt, Farchione, & Barlow, 2013; Frost & Steketee, 1997; Sassaroli et al., 2008; Wheeler et al., 2011), PC, PE (Boisseau et al., 2013; Sassaroli et al., 2008), MEC (Wheeler et al., 2011) and SPP (Antony, Purdon, et al., 1998) compared to controls. Furthermore, in a psychiatric sample, MEC and positive achievement striving (PS, O) were each significantly related to obsessive-compulsive symptoms (Norman, Davies, Nicholson, Cortese, & Malla, 1998). Additionally, in individuals with OCD, OBQ-PC was found to be a significant predictor of checking and grooming behaviours after accounting for depression and anxiety (OCCWG, 2005).

Studies in clinical samples have also demonstrated significantly greater rates of obsessive-compulsive personality disorder (OCPD) in samples with OCD relative to controls (Denys, Tenney, van Megen, de Gues, & Westenberg, 2004; Samuels et al., 2000). Samuels et al. (2000) further documented that the relatives of individuals with obsessive-compulsive disorder had a greater prevalence of OCPD than the relatives of controls, which suggested that OCPD may be a predisposing factor for OCD. These studies are relevant as perfectionism is one of the diagnostic criteria for OCPD (DSM-5, APA, 2013). Even so, these studies do not confirm that it is the perfectionism criterion of an OCPD diagnosis that is related to OCD. Nevertheless, additional studies have suggested that the perfectionism criterion is associated with the overlap that occurs between OCPD and OCD (Eisen et al., 2006). Eisen et al. (2006) found that individuals with both OCPD and OCD met the OCPD criterion of

perfectionism significantly more frequently than individuals with only OCPD. Wetterneck et al. (2011) investigated the associations between measures of each OCPD criterion and OCD severity. The only criteria of an OCPD diagnosis that were significantly related to OCD severity were perfectionism, hoarding and flexibility. Even so, additional studies utilising prospective designs are needed to determine whether the perfectionism criterion of OCPD prospectively predicts OCD severity (Eisen et al., 2006; Wetterneck et al., 2011).

There is also support for perfectionism as measured by OBQ-P and OBQ-PC maintaining OCD (Kyrios et al., 2007, as cited in Egan et al., 2011; Manos et al., 2010). Kyrios et al. (2007; as cited in Egan et al., 2011) discovered that change in OBQ-P was one of the few significant predictors of OCD therapy outcome after having controlled for pre-treatment OCD severity. Manos et al. (2010) found that change in OBQ-PC was a significant predictor of change in the severity of obsessive-compulsive symptoms from pre- to post treatment of OCD after accounting for general psychiatric distress. These studies support perfectionism as measured by OBQ-P and OBQ-PC maintaining OCD.

In sum, studies in clinical samples have indicated that CM, DA, PE, PC, SPP and OBQ-PC are associated with obsessive-compulsive symptoms, with some support for PS and O also being related to obsessive-compulsive symptoms (Antony, Purdon, et al., 1998, Boisseau et al., 2013; Frost & Steketee, 1997; Norman et al., 1998; OCCWG, 2005; Sassaroli et al., 2008; Wheeler et al., 2011). There is evidence that the perfectionism criterion of OCPD may be associated with the overlap occurring between OCPD and OCD (Eisen et al., 2006; Wetterneck et al., 2011), as well as support for OBQ-P and OBQ-PC maintaining OCD symptoms (Kyrios et al., 2007, as cited in Egan et al., 2011; Manos et al., 2010). While many of these

findings occurred after controlling for factors such as depression and anxiety, there is need for additional research to investigate the unique predictive utility of perfectionism dimensions in obsessive-compulsive symptoms after accounting for meta-cognitive factors. This is because there is some evidence to suggest that meta-cognitive factors such as the importance/control of thoughts may have greater predictive utility in obsessive-compulsive symptoms than perfectionism (e.g., Myers, Fisher, & Wells, 2008).

1.5.1.7.2. Body dysmorphic disorder. Cognitive behavioural models of body dysmorphic disorder by Veale (2004) and Wilhelm (2006) depict perfectionism as one of the personality traits that is a risk factor for body dysmorphic disorder. Individuals with elevated perfectionism may detect minor imperfections in their appearance and excessively focus upon these imperfections, leading to distress (Scheiber, Kollei, de Zwaan, Muller, & Martin, 2013; Wilhelm, 2006). Nonetheless, only four studies have examined the associations between dimensions of perfectionism and body dysmorphic disorder (Bartsch, 2007; Buhlmann, Etcoff, & Wilhelm, 2008; Hanstock & O'Mahony, 2002; Scheiber et al., 2013). Hanstock and O'Mahony (2002) found in a student sample that SPP significantly predicted levels of dysmorphic concern on the Dysmorphic Concerns Questionnaire (Oostuizen, Lambert, & Castle, 1998) after accounting for acne severity and general psychopathology. Bartsch (2007) however, reported that both SPP and SOP were significant positive predictors of Dysmorphic Concerns Questionnaire scores in a student sample. Thus, while SPP is consistently associated with dysmorphic concerns, there is mixed support for the association between SOP and dysmorphic concerns in student samples. The use of non-clinical samples also prevents generalisation to clinical samples with body dysmorphic disorder.

Two studies have examined the relationships between perfectionism dimensions and dysmorphic concerns in clinical samples (Buhlmann et al., 2008; Scheiber et al., 2013). Buhlmann (2008) found that adults with body dysmorphic disorder scored significantly higher on CM and DA than controls; whereas Scheiber et al. (2013) reported that adults with body dysmorphic disorder had significantly higher EDI-P relative to controls. EDI-P also significantly predicted dysmorphic concerns in the entire sample. These studies provide preliminary evidence of the associations between CM, DA and EDI-P with body dysmorphic disorder; however, inferences of causality cannot be made. Longitudinal research is needed to investigate whether various dimensions of perfectionism impact on body dysmorphic disorder development to provide additional support for the cognitive behavioural theories of this disorder (Buhlmann et al., 2008; Scheiber et al., 2013; Veale, 2004; Wilhelm, 2006).

1.5.1.8. Personality disorders.

1.5.1.8.1. Obsessive-compulsive personality disorder. The significance of perfectionism in obsessive-compulsive personality disorder (OCPD) is reflected in the fact that "perfectionism that interferes with task completion" is one of the diagnostic criteria for OCPD (DSM-5, APA, 2013, p. 678). Shafran and Mansell (2001 p.896) stated "it could be argued that the essence of OCPD is perfectionism centred on performance plus rigidity, and that the other features are a consequence of this". Empirical studies have also supported the stability of perfectionism as a feature in OCPD (Ansell, Pinto, Edelen, & Grilo, 2008; Ansell et al., 2010; Grilo, 2004; Hummelen, Wilberg, Pedersen, & Karterud, 2008; McGlashan et al., 2005). McGlashan et al. (2005) examined the stability of the criteria for OCPD over a period of two years in 221 individuals with OCPD. The three criteria deemed to have

the greatest prevalence and stability in these patients over the two year period were rigidity, difficulties delegating tasks and perfectionism. This study is credible because of its use of a large clinical sample as well as its two year period of assessment. Furthermore, participants were assessed by trained raters who used a reliable measure of personality disorder assessment and at 2-year follow-up the raters were blind to participants' baseline data. Therefore, these findings are reliable.

In further support of the stability of perfectionism as a feature of OCPD, factor analytic studies of OCPD in clinical samples have consistently found perfectionism to be a latent construct (Ansell et al., 2008; Ansell et al., 2010; Grilo, 2004; Hummelen et al., 2008), with the majority of studies reporting rigidity as an additional latent construct (Ansell et al., 2008; Ansell et al., 2010; Grilo, 2004). As multiple studies have reported these findings, this increases confidence in the reliability of these findings. Such findings highlight the significance of perfectionism in OCPD and can generalise to clinical populations.

Shafran and Mansell (2001) have stated that it is very likely that individuals with elevated perfectionism will have OCPD. However, as Shafran et al. (2002) and Egan et al. (2011) have highlighted, perfectionism and OCPD are not identical. This is because there are other criteria for an OCPD diagnosis, such as being miserly and hoarding that are not related to perfectionism. Thus, technically an individual can have elevated perfectionism but not meet enough criteria for OCPD; or an individual can have OCPD without being elevated in perfectionism due to meeting the other OCPD criteria (e.g., hoarding) (DSM-5, APA, 2013; Egan et al., 2011; Shafran et al., 2002).

Other studies have provided evidence of associations occurring between perfectionism and OCPD in clinical samples (Anderluh, Tchanturia, Rabe-Hesketh,

& Treasure, 2003; Halmi et al., 2005). Anderluh et al.'s (2003) retrospective study reported that women with eating disorders who recalled experiencing traits of rigidity and perfectionism in childhood demonstrated significantly greater rates of OCPD and co-morbid OCD in adulthood relative to women with eating disorders who did not recall experiencing such traits. While this supports perfectionism being involved in OCPD onset in females with eating disorders, one must be cautious in interpreting these findings as retrospective recall may introduce inaccuracies and biases into the data. Halmi et al. (2005) also investigated the association between perfectionism and OCPD in an eating disorder sample. Individuals who had OCPD and OCD had significantly higher CM and DA scores than individuals with just OCD and significantly higher CM, DA, PS, PE, and PC scores than individuals without OCD or OCPD. While DA and CM were the best subscales to discriminate between groups who had an obsessive-compulsive diagnosis and groups who did not, DA and CM were better predictors of OCPD than OCD. PS was also found to be significantly related to OCPD. The authors argued that OCPD and perfectionism may interact to be a key factor placing individuals at risk of developing an eating disorder (Halmi et al., 2005).

Pinto, Liebowitz, Foa, and Simpson (2011) found that in adults with OCD, a co-morbid OCPD diagnosis and OCPD severity were each significant predictors of lower treatment response to exposure and response prevention. Upon examination of the utility of each OCPD criterion in predicting poorer treatment response, only perfectionism was a significant predictor of lowered treatment response after having controlled for confounds such as baseline OCD severity. This study provides evidence for perfectionism being one of the main symptoms in OCPD that is associated with poor response to this OCD treatment.

In sum, there is evidence that perfectionism is a stable feature of OCPD (Ansell et al., 2008; Ansell et al., 2010; DSM-5, APA, 2013; Grilo, 2004; Hummelen et al., 2008; McGlashan et al., 2005). Additionally, studies in eating disorder samples have supported perfectionism being associated with the onset of OCPD, as well as both perfectionism and OCPD being related to the onset of eating disorders and impeding response to OCD treatment (Anderluh et al., 2003; Halmi et al., 2005; Pinto et al., 2011). Nevertheless, more research is needed to directly assess the association between perfectionism as measured by different measures (e.g., CPQ; FMPS dimensions, HMPS dimensions) and an OCPD diagnosis. Future research should also utilise longitudinal designs to enable inferences about the direction of effects.

1.5.1.8.2. Other personality disorders. There is limited research on the associations between perfectionism and other personality disorders (McCown & Carlson, 2004; Hewitt, Flett, & Turnbull, 1994). McCown and Carlson (2004) reported significantly higher SPP in individuals with narcissistic personality disorder in comparison to participants with a mood disorder and antisocial personality disorder. Hewitt, Flett, and Turnbull (1994) found significantly greater SPP in inpatients with borderline personality disorder relative to controls. These studies provide preliminary evidence for associations between SPP and narcissistic and borderline personality disorder; however, the design of these studies prevents causality from being inferred. Prospective studies are needed to examine the role of SPP and other perfectionism dimensions in these and other personality disorders.

1.5.1.9. Physical health.

1.5.1.9.1. Somatic symptoms. Studies in non-clinical samples have consistently reported associations between SPP and the experience of somatic

symptoms; however, there is mixed evidence for associations between SOP and somatic symptoms (Martin, Flett, Hewitt, Krames, & Szanto, 1996; Molnar et al., 2006; Saboonchi & Lundh, 2003). Saboonchi and Lunch (2003) reported that SPP and SOP significantly predicted self-reported somatic symptoms; whereas Martin et al. (1996) found that SPP significantly predicted self-reported somatic symptoms in those who scored low in self-efficacy. Molnar et al. (2006) discovered that SPP was significantly related to poorer physical health ratings and that this was partially mediated by high negative affect and low positive affect. Interestingly, SOP was significantly related to ratings of better physical health with complete mediators being high positive affect and low negative affect. The large sample sizes of these studies promote generalisation to non-clinical populations; however, inferences of causality cannot be made and research is needed to clarify the relationship between SOP and somatic complaints.

Studies have reported associations between CM, PS, DA, PC, SPP and the specific somatic symptom of insomnia (Lundh, Broman, Hetta, & Saboonchi, 1994; Vincent & Walker, 2000). Individuals diagnosed with insomnia have obtained significantly greater scores on CM (Lundh et al., 1994; Vincent & Walker, 2000), PS (Lundh et al., 1994), DA and PC (Vincent & Walker, 2000) relative to community controls. Furthermore, in individuals with insomnia, PC displayed significant correlations with participants' reports of delayed sleep onset latency (Vincent & Walker, 2000). These studies provide preliminary evidence for associations between CM, PS, DA, PC and insomnia. The use of clinical samples of adequate size enables generalisation to clinical populations of individuals with insomnia; however, research utilising prospective designs is needed to make inferences about the direction of effects.

Prospective studies in community samples have provided support for CM and SPP being risk factors for insomnia symptoms (Azevedo et al., 2010; Jansson-Frojmark, & Linton, 2007). Jansson-Frojmark and Linton (2007) reported that CM significantly predicted insomnia symptoms at 1-year follow-up; whereas Azevedo et al. (2010) reported that SPP significantly predicted problems falling asleep and maintaining sleep at 1-year and 2-year follow-up. The prospective designs utilised enable inferences of CM and SPP temporally preceding insomnia symptoms. Additional prospective studies need to be conducted in individuals diagnosed with insomnia disorder (DSM-5, APA, 2013), so that findings can be generalised to this population.

One study has provided preliminary evidence for an association between SOP, SPP and chronic headaches in a student sample (Bottos & Dewey, 2004). Bottos and Dewey (2004) reported that individuals classified as having chronic headaches (15+ headaches each month) obtained significantly greater SOP and SPP scores than individuals classified as having frequent headaches (one to 14 headaches each month) and infrequent headaches (less than one headache each month). Total HMPS score also significantly predicted the frequency of headaches per month as well as headache intensity. While this study provides support for a relationship between SOP, SPP and chronic headaches, the assessment of headache frequency, intensity and duration was based on retrospective self-report which may introduce bias. Causal inferences cannot be made and findings can only be generalised to student samples. Prospective studies using clinical samples are needed to add information to this area (Bottos & Dewey, 2004).

1.5.1.9.2. Irritable bowel syndrome. Cognitive behavioural theories of irritable bowel syndrome (IBS) have suggested that perfectionism is one of the

personality traits that place an individual at risk of irritable bowel syndrome (Moss-Morris & Wrapson, 2003; Sharpe, Peveler, & Mayal, 1992; Spence & Moss-Morris, 2007). However, few studies have investigated the associations between dimensions of perfectionism and irritable bowel syndrome (Moss-Morris, McAlpine, Didsbury, & Spence, 2010; Spence & Moss-Morris, 2007). Spence and Moss-Morris's (2007) prospective study examined whether the negative perfectionism subscale of the PANPS as well as other psychological risk factors would interact with gastroenteritis to predict IBS onset six months later. Negative perfectionism did not independently predict IBS onset; however, analyses of whether clusters of variables had predictive utility in IBS onset revealed that an 'anxious achievement' cluster comprised of negative perfectionism, stress and anxiety significantly predicted IBS onset six months later. The authors contended that negative perfectionism in combination with heightened anxiety and perceived stress may interact with gastroenteritis to predict IBS onset. Therefore, under such circumstances, elevated negative perfectionism is a risk factor for IBS. This study is credible due to its prospective design and large sample of individuals with gastroenteritis, which enables generalisation of results to this population (Spence & Moss-Morris, 2007).

Moss-Morris et al. (2010) discovered that a cognitive behavioural treatment for IBS that assisted individuals to change their maladaptive perfectionist beliefs, decrease their anxiety and stress, and change how they respond to IBS symptoms produced greater relief from IBS symptoms than a treatment as usual condition that consisted of psycho-education. Treatment gains were maintained at 6-month follow-up. This study provides support for the argument that targeting perfectionism and other risk factors for IBS reduces IBS symptoms (Moss-Morris et al., 2010). This research is commendable due to its RCT design and sample size; however, one

limitation is that participants' level of perfectionism was not measured at baseline or throughout the trial. Future studies of IBS interventions should measure perfectionism, anxiety and stress throughout the trial to examine how changes in these factors are related to changes in IBS symptoms.

1.5.1.9.3. Chronic fatigue syndrome. There is mixed support for the associations between total FMPS, CM, DA, PC and chronic fatigue syndrome (Deary & Chalder, 2010). Some studies have reported that individuals with chronic fatigue syndrome obtain significantly higher scores on CM, DA (Deary & Chalder, 2010; White & Schweitzer, 2000), PC (Deary & Chalder, 2010) and total FMPS (White & Schweitzer, 2000) than controls; however, other studies have found no significant differences in these perfectionism dimensions between individuals with chronic fatigue syndrome and controls (Blenikorn, Edwards, & Lynch, 1999; Woods & Wessely, 1999).

Kempke et al. (2011) used structural equation modelling to examine the relationships between dimensions of perfectionism, the severity of chronic fatigue and the severity of depression in patients with chronic fatigue syndrome. These researchers found support for a model where maladaptive perfectionism, as measured by CM and DA, exhibited significant positive relationships with fatigue severity and depression severity. Moreover, depression was a complete mediator of the association between maladaptive perfectionism and fatigue severity. This provided support for CM and DA being related to chronic fatigue symptom maintenance via level of depression. Nevertheless, the cross-sectional design of this study averts inferences of causality. Research using prospective designs is needed to draw stronger conclusions about the role of CM and DA in chronic fatigue symptoms.

1.5.2. Explaining the co-morbidity of psychological disorders. The second argument put forward by Egan et al. (2011) for perfectionism being a transdiagnostic process is that there is evidence consistent with perfectionism explaining the high co-morbidity of psychological disorders (Bieling et al., 2004; Brown et al., 2001; Egan et al., 2011; Kessler, Chui, et al. 2005). Harvey et al. (2004) proposed that the co-morbidity of psychological disorders is due to these disorders having shared maintenance factors. Bieling et al. (2004) argued that because perfectionism is an enduring personality trait (Blatt, 1995) that is associated with the symptoms of many disorders (Shafran & Mansell, 2001), perfectionism may provide an explanation for disorder co-morbidity (Bieling et al., 2004).

Consistent with this, Bieling et al. (2004) found in a large clinical sample that significant positive correlations existed between SOP, SPP, CM, DA, PC and total FMPS with the number of co-morbid anxiety and mood disorders. Furthermore, MEC was a significant positive predictor of co-morbidity after accounting for current symptom severity. Wheeler et al. (2011) found in a clinical sample of mixed diagnoses that CM, DA and SPP were significantly related to co-morbidity after controlling for symptom severity. Binary logistic regression analyses controlling for symptom severity and positive achievement striving indicated that MEC significantly predicted participants' co-morbidity status, which was whether participants had two or more co-morbid diagnoses or no co-morbidity. These studies have shown that SOP and dimensions of MEC are associated with disorder co-morbidity (Bieling et al., 2004; Wheeler et al., 2001). While prospective studies are needed to further inform this area, Bieling et al. (2004) did argue that the current findings raise the possibility of perfectionism treatments being able to simultaneously reduce the symptoms of multiple psychological disorders.

1.5.3. Perfectionism impedes treatment outcome. The third argument put forward by Egan et al. (2011) for perfectionism being a transdiagnostic process is that perfectionism has been found to negatively affect the treatment outcome of numerous psychological disorders. Blatt, Quinlan, Pilkonis, and Shea (1995) investigated how DAS-SC levels influenced participants' response to depression interventions using data from Elkin et al.'s (1989) National Institute of Mental Health Treatment of Depression Collaborative Research Program Study. DAS-SC was a significant predictor of poorer post-treatment response to CBT, interpersonal psychotherapy and anti-depressant treatments. In an extension of this research, Blatt et al. (1998) reported that pre-treatment DAS-SC remained a significant predictor of poor treatment response to these interventions at 18-month follow-up (Elkin et al., 1989). This relationship was mediated by DAS-SC having a negative effect on the therapeutic alliance (Zuroff et al., 2000). Specifically, higher DAS-SC scores were related to clients not increasing their contribution to the alliance over the course of therapy. The authors contended that clients with high DAS-SC scores may have a reduced ability to form open, collaborative relationships; or alternatively, may require longer time periods to form these relationships (Zuroff et al., 2000). The relationship between pre-treatment DAS-SC and poor treatment response at 18-month follow-up (Blatt et al., 1998; Elkin et al., 1989) was also mediated by DAS-SC being associated with poorer networks of social support (Shahar, Blatt, Zuroff, Krupnik, & Sotsky, 2004). Blatt and Zuroff (2005) found that pre-treatment DAS-SC was also a significant predictor of lower capacity to cope with life stress at 18-months following treatment.

DAS-SC has also been found to negatively affect treatment response in an adolescent sample (Jacobs et al., 2009). Jacobs et al. (2009) found that adolescents

who had higher pre-treatment DAS-SC scores continued to exhibit heightened symptoms of depression throughout twelve week treatment for depression, regardless of whether they received fluoxetine, CBT, a combination of fluoxetine/CBT or a pill placebo. Adolescents with higher pre-treatment DAS-SC scores also exhibited lower reduction in suicidality at post-treatment, which was independent of the type of treatment administered. Overall, these prospective studies provide support for elevated DAS-SC scores negatively affecting adults' and adolescents' response to multiple treatments for depression (Blatt et al., 1998; Blatt & Zuroff, 2005; Jacobs et al., 2009; Shahar et al., 2004; Zuroff et al., 2000).

Studies have indicated that EDI-P is associated with a poorer treatment response in individuals with anorexia nervosa (Sutandar-Pinnock, Woodside, & Carter, 2003); however, there is mixed evidence for EDI-P and CM being related to a poorer treatment response in bulimia nervosa (Mussel et al., 2000; Steele, Bergin, & Wade, 2011). In individuals with anorexia nervosa, pre-treatment EDI-P was positively correlated with not completing treatment and was also a significant predictor of poor treatment outcome five to ten years later (Sutandar-Pinnock et al., 2003). Mussell et al. (2000) reported that in individuals with bulimia nervosa, EDI-P was not a significant predictor of treatment completer status or remission of bulimic symptoms at post-treatment or follow-up after accounting for depression and bulimic symptom severity. However, Steele et al. (2011) found that in adults with bulimia nervosa, higher pre-treatment CM was a significant positive predictor of a smaller decrease in global score on the Eating Disorder Examination (Fairburn & Cooper, 1993) at post-treatment. Further research is needed to examine the role of EDI-P, CM and other perfectionism dimensions in treatment response in bulimia nervosa samples. Nevertheless, Egan al. (2012) argued that based on the studies showing

EDI-P to remain high in individuals deemed recovered from an eating disorder (e.g., Bastiani et al., 1995; Lilenfeld et al., 2000), elevated EDI-P may still be a significant component contributing toward eating disorder relapse if it is not treated (Egan et al., 2012).

There is mixed evidence for PS, CM and DA negatively affecting response to social anxiety treatment (Lundh & Ost, 2001; Rosser et al., 2003). Lundh and Ost (2001) found that adults who did not respond to CBT for social anxiety had elevated PS, CM and DA relative to those who responded; whereas Rosser et al. (2003) found that elevated pre-treatment CM did not significantly predict poor treatment response. There is a need for additional research to clarify the impact of these dimensions on treatment outcome for individuals with social phobia.

There is also some evidence that DA and the perfectionism criterion of OCPD predicts poorer response to OCD treatment (Chik, Whittal, & O'Neill, 2008; Pinto et al., 2011). In adults with OCD, DA was a significant predictor of higher total scores on the Yale-Brown Obsessive Compulsive Scale (Y-BOCS; Goodman et al., 1989) as well as higher compulsion scores on the Y-BOCs at post-treatment (Chik et al., 2008). The perfectionism criterion of an OCPD diagnosis also significantly predicted lower response to exposure and response prevention treatment in individuals with OCD (Pinto et al., 2011). There is currently no research on the impact of perfectionism on response to treatments for panic disorder with or without agoraphobia, specific phobia or generalised anxiety disorder, therefore additional research is needed in this area.

1.6. Transdiagnostic Treatments

Reviews by Craske (2012) and Egan et al. (2012) have summarised the advantages of trandiagnostic treatments. For clients with co-morbid disorders, a

transdiagnostic treatment may simultaneously ameliorate the symptoms of these disorders. This would prevent psychologists having to select between numerous treatment protocols designed for specific disorders. It would offer an alternative to psychologists concurrently implementing multiple protocols for specific disorders, which actually does not improve treatment outcome (Craske et al., 2007; Craske, 2012; Egan et al., 2012). Transdiagnostic treatments would also prevent psychologists sequentially administering specific treatment protocols for each disorder (Egan et al., 2012). A related advantage of a transdiagnostic treatment is that it would have greater practicality and cost-effectiveness than disorder-specific treatments (Craske, 2012; Egan et al., 2012). Administering one treatment to decrease the symptoms of multiple disorders rather than multiple protocols would confer greater time efficiency for the psychologist and client and would substantially reduce the cost for the client (Egan et al., 2012). This is important given real-world constraints such as clients only receiving a government rebate on ten clinical psychology sessions per year and the long waitlists for psychology services at Government organisations. Furthermore, it may be easier and more efficient for psychologists to be trained in the principles and treatment strategies of one transdiagnostic intervention as opposed to numerous disorder-specific interventions (Egan et al., 2012). Egan et al. (2012) argued that transdiagnostic treatments may also be more ethical in comparison to sequentially administering numerous treatment protocols because transdiagnostic treatments may alleviate the symptoms of multiple disorders in a shorter time frame.

Craske (2012) and Egan et al. (2012) have outlined some of the transdiagnostic treatments that have emerged in the past decade. As discussed, Fairburn et al. (2003a) developed CBT-E, which has evidence of efficacy and

effectiveness (Byrne et al., 2011; Dalle-Grave, Callugi, Doll, et al., 2013; Dalle-Grave, Callugi, Conti, et al., 2013; Fairburn et al., 2009; Fairburn et al., 2013). A number of transdiagnostic cognitive-behavioural treatments for anxiety disorders have also been developed by different research groups (Norton & Phillip; 2008). For example, Nathan, Rees, and Smith's (2001) transdiagnostic treatment used cognitive behavioural techniques to target common maintenance factors in anxiety and depression. McEvoy and Nathan (2007) evaluated the effectiveness of this program in a clinical sample with depression and anxiety diagnoses and then used bench-marking strategies to compare the results to those of other effectiveness and efficacy studies. The effect sizes for the reductions in anxiety and depression observed in this transdiagnostic treatment were in the range reported in the bench-marking studies.

Craske et al. (2011) developed the Coordinated Anxiety Learning and Management (CALM) Tools for Living Program to address the symptoms of GAD, social anxiety disorder, panic disorder and PTSD. There is evidence of the efficacy of this treatment relative to usual care in patients with GAD, social anxiety disorder, panic disorder and PTSD (Craske et al., 2011; Roy-Byrne et al., 2010). The Unified Protocol for the Transdiagnostic Treatment of Emotional Disorders (Bossieau, Farchione, Fairholme, Ellard, & Barlow, 2010; Ellard, Fairholme, Bossieau, Farchione, & Barlow, 2010; Wilamowska et al., 2010) utilises CBT strategies to target the maintenance factors of anxiety disorders and unipolar mood disorders with a particular focus on how individuals react to emotions (Craske, 2012; Wilamowska et al., 2010). To date, one RCT had supported the efficacy of this intervention (Farchione et al., 2012).

While there is some evidence to support the efficacy and effectiveness of a transdiagnostic treatment for eating disorders (e.g., Fairburn et al., 2009) as well as

transdiagnostic treatments for anxiety and depression (e.g., Farchione et al., 2012), none of these transdiagnostic treatments target the symptoms of anxiety disorders, depression *and* eating disorders (Egan et al., 2012). Egan et al. (2011) argued that a significant implication of perfectionism being a transdiagnostic process is that interventions for perfectionism could concurrently reduce the symptoms of related psychological disorders, which include eating disorders, anxiety disorders and depression (Bieling et al., 2004; Egan et al., 2011; Fairburn et al., 2003a; Harvey et al., 2004).

Nonetheless, it is to be noted that there is currently a substantially smaller evidence base supporting the efficacy and effectiveness of transdiagnostic treatments compared to the evidence base for disorder-specific treatments (Egan et al., 2012). This is because transdiagnostic treatments have only primarily emerged in the past decade. Given the importance of relying on the evidence-base to inform treatment decisions and the current imbalance in the evidence base for transdiagnostic versus disorder-specific treatments, psychologists would need to carefully contemplate their decision to administer a transdiagnostic treatment instead of a disorder-specific treatment. While transdiagnostic treatments are very promising, there is a need for additional research to examine the efficacy and effectiveness of transdiagnostic treatments to guide treatment selection (Egan et al., 2012).

1.7. CBT for Clinical Perfectionism as a Transdiagnostic Treatment

Shafran et al. (2002) argued that based on the maintenance model of clinical perfectionism, CBT for clinical perfectionism (CBT-CP) needs to contain four components. First, the therapist needs to assist clients to recognise that their clinical perfectionism is a problem and to help clients to personalise the cognitive-behavioural formulation of what maintains their clinical perfectionism (Shafran et

al., 2002). In this step, it is important for clients to gain an understanding that it is maladaptive for their self-esteem to be overly reliant on striving for and attaining standards in a specific area. Second, CBT-CP needs to assist clients to identify and engage in different methods of thinking and behaving that will effectively broaden the domains upon which their self-esteem is based. Clients should be helped to adopt multiple domains upon which to base their self-esteem, including areas of their life that may have been previously neglected due to striving, such as friendships and hobbies (Shafran et al., 2002).

Third, CBT-CP should include behavioural experiments to challenge perfectionist predictions. These behavioural experiments frequently consist of exposure to situations that clients have previously avoided (Shafran et al., 2002). Based on a revision of the model (Shafran et al., 2010) behavioural experiments should also target counter-productive behaviours such as performance checking. Fourth, CBT-CP needs to contain cognitive behavioural techniques that help the clients to identify and challenge the way in which they set standards in the form of rigid dichotomous rules. These cognitive behavioural techniques also assist clients to challenge the self-criticism that occurs when a standard is not attained. Additionally, treatment needs to target cognitive biases such as negative filter and hypervigilant monitoring of performance (Shafran et al. 2002). Based on the updated model of clinical perfectionism (Shafran et al., 2010), treatment also needs to include cognitive-behavioural strategies that target performance-related behaviours such as procrastination (Egan et al., 2011; Shafran et al., 2010).

1.7.1. CBT for perfectionism in non-clinical samples. Only a handful of studies have evaluated CBT for perfectionism in non-clinical samples (Arpin-Cribbie et al., 2008; Arpin-Cribbie, Irvine, & Ritvo, 2012; DiBartolo, Frost, Dixon, &

Almodovar, 2001; Ferguson & Rodway, 1994; Pleva & Wade, 2006; Radhu et al., 2012). In these studies, the CBT administered was not based on Shafran et al.'s (2002) model of clinical perfectionism as most of these non-clinical studies occurred before Shafran et al.'s (2002) article. The remaining non-clinical studies utilised other CBT strategies for perfectionism such as Antony and Swinson's (1998) guided self-help book. Nevertheless, these studies are still worthy of discussion as they provide support for CBT targeting perfectionism being effective. Ferguson and Rodway (1994) employed an ABA design to investigate the effectiveness of CBT for perfectionism in nine adults with elevated scores on Burns' Perfectionism Scale (Burns, 1980a). The CBT centred upon identifying, challenging and restructuring perfectionist thoughts as well as changing perfectionist behaviours (Burns, 1980b). Visual inspection of the data suggested decreases in perfectionism on the Burns' Perfectionism Scale, decreases in perfectionist cognitions (Irrational Values Scale; McDonald & Games, 1987) and decreases in self-rated perfectionist behaviours (Self-Anchored Scales; Ferguson & Rodway, 1994) for all clients following the intervention. However, there was no control group and no official statistical analyses, which prevent these changes from being confidently attributed to the intervention (Ferguson & Rodway, 1994).

DiBartolo et al. (2001) used a 2 x 2 factorial design to evaluate the effectiveness of an eight minute CBT treatment for perfectionism in 30 female students. These participants were selected as they had obtained CM scores in the upper quartile or lower quartile of a sample of 138 students. Participants were randomised to receive a CBT intervention or be in a distraction condition before giving an oral presentation. The CBT intervention focussed on challenging probability overestimation and catastrophising and then forming a coping statement

about the oral presentation (DiBartolo et al., 2001). The distraction condition involved crossing out letters in a textbook. After the CBT treatment, individuals high in CM and those low in CM exhibited significant decreases in their ratings of the probability and cost of their feared predictions about the oral presentation; however, this decrease was greater for individuals high in CM. One limitation was that the researchers did not assess whether the changes in probability and cost ratings demonstrated by the treatment condition were greater than those occurring in the distraction condition. Even so, participants who had received the CBT did report significantly lower anxiety prior to the speech than those from the distraction condition. This intervention was very short and a sufficient follow-up assessment was not provided (DiBartolo et al., 2001).

Four RCTs have evaluated the efficacy of CBT for perfectionism in non-clinical samples (Arpin-Cribbie et al., 2008; Arpin-Cribbie et al., 2012; Pleva & Wade, 2006; Radhu et al., 2012). These designs have greater internal validity than the previous studies reviewed in this section; however, the findings still do not generalise to clinical populations. Arpin-Cribbie et al. (2008) used a sample of 83 students with elevated PCI scores to examine the efficacy of a 10-session online treatment for perfectionism. This treatment contained stress management techniques as well CBT techniques for perfectionism that focused on altering perfectionist beliefs and the impact of these beliefs on mood (Arpin-Cribbie et al., 2008). This treatment was compared to a pure stress management condition that did not incorporate cognitive components, as well as a control condition. Students in the combined stress management plus CBT for perfectionism condition displayed significantly greater reductions in SPP and depression compared to those in the pure stress management and control conditions. Those in the combined condition also

exhibited significantly greater reductions in CM, SOP and PCI scores compared to the control condition. Structural equation modelling indicated that greater level of treatment was a significant predictor of greater reduction in perfectionism (SOP, SPP, CM, PCI scores) and distress. Greater reduction in perfectionism (SOP, SPP, CM, PCI scores) was also significantly associated with greater decreases in distress. This study provides support for online CBT for perfectionism significantly reducing perfectionism and psychological distress in a non-clinical sample.

Arpin-Cribbie et al. (2012) evaluated the stress management plus CBT for perfectionism treatment relative to pure stress management and control conditions in 77 participants with elevated PCI scores. Participants in the combined stress management and CBT for perfectionism condition demonstrated significantly greater reductions in CM, SOP, SPP and PCI scores compared to those in the stress management and control conditions; and significantly greater decreases in anxiety and depression compared to the control condition. For participants in the CBT for perfectionism plus stress management condition, changes in SOP, SPP, CM and PCI scores were significantly associated with changes in anxiety, anxiety sensitivity and depression. Radhu et al. (2012) compared an online CBT intervention for perfectionism to a waitlist control condition in 24 adults with elevated PCI scores. The treatment focused on reframing beliefs associated with perfectionism and the influence of these beliefs on mood (Radhu et al., 2012). Participants in the intervention condition exhibited significantly greater reductions in automatic thoughts and anxiety sensitivity relative to those in the waitlist control condition. Collectively, these studies indicate that web-based CBT interventions can produce reductions in dimensions of perfectionism and psychopathology; however, the non-

clinical samples prevent generalisations to clinical populations (Arpin-Cribbie et al., 2008; Arpin-Cribbie et al., 2012; Radhu et al., 2012).

Pleva and Wade's (2007) RCT evaluated the efficacy of guided self-help CBT for perfectionism compared to pure self-help CBT for perfectionism in a non-clinical sample. Forty nine adults with elevated total FMPS scores were randomised to a guided self-help or a pure self-help condition. In the guided self-help condition, participants read and completed exercises from Antony and Swinson's (1998) cognitive behavioural self-help book for perfectionism with minimal therapist guidance. In the pure self-help condition, participants read and completed exercises from Antony and Swinson's (1998) book in line with written guidelines. Adults receiving guided self-help exhibited significantly greater reductions in obsessive-compulsive symptoms relative to adults receiving pure self-help. Both guided and pure self-help conditions displayed decreases in perfectionism and depression between pre- and post-treatment; however, there were no significant differences between conditions. Specifically, participants receiving guided self-help demonstrated significant pre-post decreases in CM, PS, DA, depression and obsessive-compulsive symptoms. These decreases were maintained at 3-month follow-up with the exception of depression; however, this still remained at a lower level than pre-treatment depression scores. Individuals receiving pure self-help exhibited significant pre-post decreases in CM and depression, which were maintained at 3-month follow-up. There was also a significant decrease in DA and obsessive-compulsive symptoms between post-treatment and 3-month follow-up. Thus, while there are improvements in dimensions of perfectionism and depression following both guided and pure self-help, it appears that guided self-help is more effective than pure self-help in the treatment of obsessive-compulsive symptoms. A

greater percentage of participants from the guided self-help condition tended to demonstrate reliable change in PS and obsessive-compulsive symptoms; however, tests of the significance of these differences were not conducted. This study did not include a pure control group. It also did not control for differences in reading and homework compliance that may have occurred between groups and accounted for any interaction effects (Pleva & Wade, 2007). The non-clinical sample prevents generalisation to clinical populations.

1.7.2. CBT for perfectionism in clinical samples. Two single-case studies have explored the effectiveness of CBT for perfectionism using clinical participants (Hirsch & Hayward, 1998; Shafran, Lee, & Fairburn, 2004). In Hirsch and Hayward's (1998) study, CBT strategies were administered to a 40-year old male who had an elevated DAS-SC score as well as anxiety and depression. The CBT strategies focused on the identification and challenging of rigid perfectionist beliefs about performance (Hirsch & Hayward, 1998). Following CBT for perfectionism, the participant demonstrated reductions in perfectionism. Hirsch and Hayward (1998) contended that these reductions were evident by the participant's engagement in activities he could not perform perfectly and his willingness to no longer be perfect in consistently completing his therapy homework. Furthermore, there were reductions in the extent to which the participant believed his rigid perfectionist beliefs and increases in the extent to which the participant believed his flexible beliefs. These reductions in perfectionism were followed by decreases in anxiety and depression. While this study provides preliminary evidence for the effectiveness of CBT for perfectionism in reducing perfectionism, anxiety and depression, post-treatment DAS-SC scores were not recorded to support the reported reductions in perfectionism. This study did not have a control group so does not have high internal

validity. Furthermore, there was only one participant, which limits the generalisation of findings.

In Shafran et al.'s (2004) study, CBT for clinical perfectionism (CBT-CP) based on the treatment principles of Shafran et al. (2002) was administered to a 26-year old female with an elevated CPQ score and binge-eating disorder. Following CBT-CP, the participant reported reductions in CPQ score, eating disorder symptoms and depression that were maintained at 5-month follow-up (Shafran et al., 2004). Given the absence of a control group, it is still possible that these effects arose from non-specific effects such as the passage of time (Gravetter & Wallnau, 2004). Furthermore, it is possible that improvements in binge-eating resulted in reductions in CPQ scores. The use of only one participant limits the generalisation of findings (Shafran et al., 2004).

Two studies used multiple baseline single-case series designs with clinical samples to explore the effectiveness of CBT-CP (Egan & Hine, 2008; Glover, Brown, Fairburn, & Shafran, 2007). In Glover et al.'s (2007) study, nine adults with elevated CPQ scores as well as a diagnosis of an anxiety disorder or depression received ten sessions of CBT-CP. This CBT included treatment components by Shafran et al. (2002) and Fairburn et al. (2003). Between baseline and post-treatment, there were statistically significant decreases in CPQ, SOP and DAS-SC scores, which were maintained at 3-month follow-up. There were no statistically significant reductions in depression or anxiety. Between baseline and 3-month follow-up, three participants exhibited clinically significant change in CPQ scores and six participants made clinically significant change in DAS-SC and SOP scores. Between baseline and post-treatment, three participants exhibited clinically significant change in depression and one participant maintained this at 3-month

follow-up. Clinically significant change in anxiety did not occur. Nevertheless, this study did not have a stable baseline phase or separate waitlist control group, which prevents these findings from being confidently attributed to the CBT-CP intervention (Glover et al., 2007; Gravetter & Wallnau, 2004).

In Egan and Hine's (2008) study, eight sessions of CBT-CP were administered to four adults with elevated perfectionism and either depression or an anxiety disorder. These participants were deemed to have heightened perfectionism as they had obtained total FMPS scores within or above the mean FMPS range calculated from four studies of clinical samples with an anxiety disorder (Shafran & Mansell, 2001). The CBT strategies were based on Shafran et al.'s (2002) model. Between baseline and post-treatment three adults exhibited clinically significant change in total FMPS scores and two adults made clinically significant change in CM; however, there were no clinically significant changes in PS. Two adults maintained their changes on total FMPS and CM at 2-week follow-up. No clinically significant decreases in depression or anxiety occurred, although the authors argued that low pre-treatment depression and anxiety scores may have limited these findings. There was no waitlist control group and the sample size was small, which restricts the conclusions that can be drawn (Egan & Hine, 2008).

Only two RCTs have investigated the efficacy of individual CBT for perfectionism in clinical samples (Riley et al., 2007; Steele & Wade, 2008). Steele and Wade (2008) conducted an RCT to explore the efficacy of guided self-help CBT for perfectionism. This intervention was based on Antony and Swinson's (1998) self-help book. Forty-eight females who had EDNOS or bulimia nervosa were randomised to receive guided self-help CBT for perfectionism (Antony & Swinson, 1998), conventional CBT for eating disorders (Cooper, 1993, in Steele & Wade,

2008) or a condition containing dismantled mindfulness components (Segal, Williams, & Teasdale, 2002). Every condition displayed significant reductions in CM, PS, eating disorder symptoms and depression as well as significant increases in self-esteem between pre-treatment and post-treatment. All treatment gains with the exception of PS were maintained at 6-month follow-up. These findings are consistent with guided self-help CBT for perfectionism producing similar therapeutic outcomes to a conventional eating disorder treatment as well as a dismantled mindfulness condition that was argued to contain active treatment components. Interestingly, the guided self-help CBT for perfectionism condition tended to produce greater effect sizes for the non-targeted psychopathology of co-morbid depression and anxiety compared to the other conditions (Steele & Wade, 2008). These trends are clinically relevant as they are in line with perfectionism having a transdiagnostic role (Egan et al., 2011). A limitation of this study is that there was no pure control condition (Steele & Wade, 2008).

Riley et al. (2007) investigated the efficacy of individual CBT for clinical perfectionism (CBT-CP) by comparing it to a waitlist control condition. The CBT-CP was based on Shafran et al.'s (2002) model of clinical perfectionism. Twenty adults deemed to have clinical levels of perfectionism as assessed by a semi-structured interview participated in this trial. Seventy per cent of these adults had an anxiety disorder or depression. Participants were randomised to either immediately receive CBT-CP (immediate treatment condition) or be on an 8-week waitlist (waitlist condition). Participants in the immediate treatment condition demonstrated significantly greater reductions in clinical perfectionism as measured by the CPQ and the Clinical Perfectionism Examination (CPE; Riley, Cooper, Fairburn, & Shafran, unpublished, in Riley et al., 2007) compared to the waitlist condition. For

the immediate treatment condition the effect sizes were large. There were no significant interaction effects for the FMPS or HMPS scales. Participants in the immediate treatment condition also demonstrated significantly greater decreases in BDI-II scores and Brief Symptom Inventory scores (Derogatis & Melisaratos, 1983) relative to the waitlist condition; however, there was no significant interaction effect for anxiety. After the entire sample had received CBT-CP, post-treatment scores on CPQ, CPE, total FMPS and SOP were significantly lower than baseline scores and reductions were maintained at 4-month follow-up. Post-treatment BDI-II, Brief Symptom Inventory (Derogatis & Melisaratos, 1983) and Beck Anxiety Inventory scores (Beck et al. 1988) were also significantly lower than baseline scores and decreases on the latter two measures were maintained at 4-month follow-up. After receiving CBT-CP, 75 per cent of the sample exhibited clinically significant reductions in CPE scores and the number of adults who had depression and anxiety diagnoses had halved. This study has high internal validity due to the inclusion of a control group and randomisation to conditions; however, the sample size was small and it was not a pure clinical sample (Riley et al., 2007).

1.8. Group CBT

Numerous controlled studies have supported the efficacy of group CBT for psychological disorders including depression (e.g., Shaw, 1977; Oei & Dingle, 2008), bipolar disorder (e.g., da Costa et al., 2011), obsessive-compulsive disorder (e.g., Anderson & Rees, 2007, Cordioli et al., 2003), social anxiety disorder (e.g., Heimberg, Dodge, Hope, Kennedy, & Zollo, 1990), panic disorder (e.g., Telch et al., 1993), generalised anxiety disorder (Dugas et al., 2003), post-traumatic stress disorder (e.g., Beck, Coffey, Foy, Keane, & Blanchard, 2009) as well as eating disorders (e.g., Wilfley et al., 1993).

There are also advantages of administering CBT in a group format (Australian Psychological Society, 2013; Himle et al., 2003). The first advantage is the reduced cost of group therapy relative to individual therapy (Himle et al., 2003). Himle et al. (2003) estimated this cost-saving to be $600 per patient over 12 sessions of therapy. One decade later this cost-saving has increased. The Australian Psychological Society (APS; 2013) recommended that for a 45 to 60 minute individual therapy session a fee of $228 should be charged, whereas for a 45 to 60 minute group therapy session a fee of $46 should be charged. Over twelve sessions this equates to a cost-savings of $2,184 per client. The second advantage of group therapy is increased time efficiency for the psychologist (Himle et al., 2013). Himle et al. (2003) argued that group therapy could equate to a 67 to 75 per cent decrease in the time psychologists spend with each client. If one psychologist delivered a 12-week treatment protocol to six clients in the form of 1.5 hour to 2 hour group sessions, this would equate to 18 to 24 hours of therapy time. This is contrasted to the 72 hours it would take a psychologist to deliver a 12-week treatment protocol in the form of 1-hour individual treatment sessions to six clients. Himle et al. (2003) stated that while this time efficiency decreases when psychologists co-facilitate a group, group therapy is still more time efficient compared to individual therapy.

In addition to practical advantages, delivery of CBT in a group format has been proposed to confer therapeutic advantages (Bieling et al., 2006; Yalom, 1995; Yalom & Leszcz, 2005). Bieling et al. (2006) drew upon the seminal work of Yalom (1995) to put forward several mechanisms of change that can occur within the context of a CBT group. The first mechanism of change was optimism, where the group context fosters optimistic expectations and hopefulness about recovery, which were posited to positively influence therapeutic outcome (Bieling et al., 2006).

Optimism was argued to arise in a group CBT setting because in addition to the client receiving information about the efficacy and effectiveness of CBT from the therapist, they are able to observe and acquire information about other group members who are progressing as a result of treatment. Bieling et al. (2006) contended that this setting was supportive of behaviour change, which would further increase clients' motivation to recover.

The second mechanism of change put forward was inclusion, where in a group context clients become aware that others share similar concerns to their own. This awareness was proposed to bring a sense of relief, decreased feelings of isolation and increased feelings of belonging as clients learn that they are not alone in experiencing their concerns (Bieling et al., 2006; Yalom, 1995; Yalom & Leszcz, 2005). This mechanism of change is very similar to Yalom's (1995) concept of universality, which was argued to be particularly powerful in a therapy context as some clients have previously had limited opportunities to discover the similar concerns of others due to their interpersonal difficulties or excessive social isolation (Yalom, 1995; Yalom & Leszcz, 2005).

The third mechanism of change proposed was group learning, where the group environment presents multiple chances for clients to learn (Bieling et al., 2006; Yalom, 1995; Yalom & Leszcz, 2005). Bieling et al. (2006) stated that in addition to the CBT material received from the therapist, clients in group therapy can learn through the information and feedback given to them from other members of the group. The therapist can assist in this process to ensure that information and feedback from other group members is delivered in a helpful manner. Bieling et al. (2006) argued that clients can also learn through observing the therapist and other members of the group. The therapist can promote adaptive behaviour to be modelled

by assisting - and having other group members assist - a group member to engage in various CBT techniques (e.g., exposure exercises, role playing and problem solving).

The fourth mechanism of change proposed was shifting self-focus (Bieling et al., 2006). Bieling et al. (2006) posited that the group therapy context enables clients to experience the benefit of assisting other clients, be it through their communication of information or techniques or through the provision of reassurance or support. The act of helping other members is beneficial to the client as they learn that they can be effective to other members and assist these members to make progress (Bieling et al., 2006; Holmes & Kivlighan, 2000; Yalom, 1995; Yalom & Leszcz, 2005). It was argued that in helping others, emphasis is shifted away from a self-focus and toward a focus on others in the group and the group itself (Bieling et al., 2006).

The fifth mechanism of change put forward was the modification of maladaptive relational patterns (Bieling et al., 2006). Bieling et al. (2006) purported that in a group setting, a client's unhelpful interpersonal patterns can be corrected. Specifically, in this setting the therapist can draw attention to the manner in which a group member interacts with the therapist and with others in the group and extract feedback from the group members as to the impact of this interaction upon them. This feedback can assist the group member to gain insight into their unhelpful styles of interpersonal communication and the impact of their style on others. The therapist can then assist the client to adopt more helpful styles of communication.

The sixth mechanism of change was group cohesiveness (Bieling et al., 2006; Yalom, 1995; Yalom & Leszcz, 2005). Bieling et al. (2006) referred to group cohesiveness as the factors that make a group attractive to the individuals within the group and posited that these factors assist with behavioural and cognitive change. Examples of these factors included feeling like one belongs in the group, feelings of

comfort in the group and unreserved acceptance by individuals within the group (Bieling et al., 2006; Bloch & Crouch, 1985). The seventh mechanism of change was emotional processing in the group setting (Bieling et al., 2006). Bieling et al. (2006) contended that the group setting fosters an environment where group members can overtly express and process thoughts and emotions and that the therapist can utilise these times to extract underlying automatic thoughts and beliefs, which become a focus of treatment. Importantly, Bieling et al. (2006) argued that one group member expressing and processing their thoughts and emotions can benefit the other members of the group as it may raise an issue to be discussed and managed that may have otherwise remained undiscussed. This can further enhance group cohesion and provide group members with a chance to offer support to one another.

These proposed mechanisms of change have been derived from clinicians with many years of experience delivering psychotherapy (Bieling et al., 2006). Bieling et al. (2006) contended that these mechanisms of change are likely to positively influence therapeutic outcome. While this provides support for the credibility of these mechanisms of change, it is to be noted that there are limited empirical studies that directly link these mechanisms of change to therapeutic outcomes (Bieling et al., 2006). One of the main reasons for this is that the majority of studies investigating group psychotherapy have investigated whether therapeutic change actually occurs, rather than exploring the specific factors that brought about this change. Future studies need to investigate whether these mechanisms of change are significantly associated with therapeutic outcomes (Bieling et al., 2006; Greene, 2000).

1.9. Group CBT for Perfectionism

As discussed, CBT for perfectionism has the potential to simultaneously ameliorate the symptoms of multiple psychological disorders (Bieling et al., 2004; Egan et al., 2011). This transdiagnostic treatment may confer increased time efficiency for psychologists and clients, as well as decreased cost for clients relative to disorder-specific treatments. This is because delivery of this intervention may prevent psychologists having to administer multiple disorder-specific treatment protocols (Craske, 2012; Egan et al., 2012). If this transdiagnostic treatment is then administered in a group format rather than in an individual format, this would result in additional time efficiency for the psychologist, as well as additional cost savings for the clients, which arise from treating multiple clients at the same time (APS, 2013; Himle et al., 2003). The clients receiving this group transdiagnostic treatment may also benefit from the mechanisms of change that were proposed to occur in a group setting (Bieling et al., 2006; Yalom, 1995; Yalom & Leszcz, 2005). Therefore, group CBT for perfectionism would be advantageous given real-world financial and time constraints (Craske, 2012; Egan et al., 2012; Himle et al., 2003). Despite these advantages, there is a dearth of studies in the literature that have examined the efficacy or effectiveness of group CBT for perfectionism. While the limited studies that have investigated the effectiveness of group CBT for perfectionism have produced promising results, these studies have been limited by insufficiently rigorous designs (Kutlesa & Arthur, 2008), the use of non-clinical samples (Kutlesa & Arthur, 2008), small sample sizes (Egan & Stout, 2007), or the absence of a separate control condition (Egan & Stout, 2007; Steele et al., 2013), which undermine the internal validity of these studies and limit the generalisation of findings.

1.9.1. Group CBT for perfectionism in non-clinical samples. One of the earliest studies of group CBT for perfectionism was conducted by Barrow and Moore (1983). Barrow and Moore (1983) designed a group CBT program for perfectionism that had four aims i) to assist clients in being more selective with their goals and standards; ii) to help clients acquire greater acceptance of the instances when their standards have not been attained; iii) to assist clients to separate their self-esteem from their performance; and iv) to help clients challenge their perfectionist cognitions. However, no studies have examined the effectiveness of this group CBT program.

Only one study has examined the effectiveness of a group CBT intervention for perfectionism in a student sample (Kutlesa & Arthur, 2008). Kutlesa and Arthur (2008) employed a quasi-experimental design with 90 students to evaluate the effectiveness of group CBT for perfectionism compared to a career planning group and a psychology class. The 8-week CBT course was based on techniques by Beck (1993) and also included interpersonal process techniques by Yalom (1995). Thus, it was not based on Shafran et al.'s (2002) maintenance model of clinical perfectionism. Participants receiving group CBT for perfectionism exhibited significantly greater decreases in SOP, OOP, anxiety and depression than participants in the psychology class and career planning group. This study has many limitations, some of which include self-selection to groups, the treatment group having substantially greater SOP, SPP, OOP, anxiety and depression scores at pre-treatment compared to the other groups and the absence of a follow-up period. Thus, it is difficult to attribute these changes in perfectionism and psychopathology to the group CBT intervention (Kutlesa & Arthur, 2008).

1.9.2. Group CBT for clinical perfectionism in clinical samples. There are only two studies that have investigated the effectiveness of group CBT for *clinical* perfectionism in clinical samples (Egan & Stout, 2007; Steele et al., 2013). In both of these studies, the CBT intervention was based on the maintenance model of clinical perfectionism (Shafran et al., 2002). Steele et al.'s (2013) group CBT-CP also targeted performance-related behaviours based on Shafran et al.'s (2010) updated model of clinical perfectionism. For simplicity, the group CBT for clinical perfectionism treatment can be referred to as group CBT-CP. Egan and Stout (2007) used single case experimental design series methodology to examine the impact of eight sessions of group CBT-CP on three participants. Participants had elevated scores on total FMPS, PS and CM as well as depression or an anxiety disorder. Between baseline and post-treatment, each participant exhibited downward trends in total FMPS and CM. One participant demonstrated a downward trend in PS. Downward trends in total FMPS continued during 3-week follow-up for all participants, whereas downward trends in CM and PS continued throughout 3-week follow-up for one participant; however, these decreases were not clinically significant. Between baseline and post-treatment, all participants exhibited downward trends in depression, which continued throughout 3-week follow-up for two participants. Between baseline and post-treatment, all participants exhibited downward trends in anxiety that continued during 3-week follow-up for one participant and were maintained at 3-week follow-up for two participants. One adult exhibited a clinically significant decrease in depression at post-treatment that was maintained at 3-week follow-up. Limitations of this study include the small sample and the study not incorporating a control group (Egan & Stout, 2007).

Steele et al. (2013) investigated the effectiveness of psycho-education and group CBT-CP in 21 adults with elevated CM scores as well as an anxiety disorder or current or past depression. Steele et al. (2013) utilised a case series design where participants first had a 4-week no treatment period that functioned as a control period. Participants then received psycho-education material and after another four weeks received eight weeks of group CBT-CP. The psycho-education and group CBT-CP material were from Shafran et al.'s (2010) book 'Overcoming perfectionism: a self-help manual using cognitive-behavioural techniques'. While there were no statistically significant improvements following the psycho-education, after receiving the group CBT-CP participants exhibited significant pre-post reductions in CPQ scores, PS, CM, DAS-SC scores, anxiety, depression and stress, which were all maintained at 3-month follow-up. Nevertheless, as the design did not incorporate a separate control group, one cannot exclude the possibility that these results emerged due to confounds such as the passage of time instead of the intervention. To overcome this limitation, a study needs to evaluate the efficacy of group CBT-CP in a clinical sample utilising a design that has a separate control group. Therefore, in Study II of this thesis, an RCT design is used to evaluate the efficacy of group CBT-CP in a clinical sample. Employing this RCT design and ensuring there are enough participants for sufficient power will enable any findings to be confidently attributed to the intervention (Chambless & Hollon, 1998).

1.10. Investigating the Effect of Group CBT-CP on Quality of Life

Adults with depressive disorders, anxiety disorders and eating disorders have been found to have a significantly lower quality of life compared to adults who do not have a psychological disorder (Mond, Hay, Owens, Rogers, & Beaumont, 2005; Rapaport, Clary, Fayyad, & Endicott, 2005). Rapaport et al. (2005) examined the

Quality of Life, Enjoyment and Satisfaction Questionnaire-18 (Q-LES-Q-18; Endicott, Nee, Harrison, & Blumenthal, 1993) scores provided by 11 samples of adults with mood or anxiety disorders before they participated in treatment trials. These scores were compared to those from a community sample. The Q-LES-Q scores from the clinical samples were significantly lower than those from the community sample. Mond et al. (2005) similarly found that a sample of 87 individuals with eating disorders scored significantly lower on health-related quality of life and subjective quality of life relative to a sample of young females from the general population. While these studies do not enable causal inferences, they do highlight an association between the presence of depressive disorders, anxiety disorders and eating disorders and lower quality of life that generalise to clinical populations (Mond et al., 2005; Rapaport et al., 2005).

A study has also suggested that having co-morbid psychological disorders is associated with a lower quality of life than having one or no psychological disorder (Pirkola et al., 2009). Pirkola et al. (2009) reported that adults who had co-morbid depressive and anxiety disorders scored the lowest on health-related quality of life and perceived health and the highest on psychological distress relative to adults with a single disorder or no psychological disorder. Disorder co-morbidity was a significant negative predictor of perceived health and health-related quality of life, and a significant positive predictor of psychological distress after accounting for age, gender, diagnostic subgroup and being a recipient of mental health treatment. This study supports the presence of disorder co-morbidity being associated with lower quality of life, perceived health and higher distress after accounting for important confounds (Pirkola et al., 2009). These findings can generalise to clinical populations.

As treatments targeting perfectionism have the potential to simultaneously reduce the symptoms of multiple psychological disorders (Egan et al., 2011), it would be of interest to determine whether group CBT-CP also increases quality of life. Examining whether psychological treatments can reduce psychological symptoms and improve quality of life is important given that the World Health Organisation (1948, p. 100) has defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease". Currently, no published perfectionism treatment trials have included a quality of life outcome measure. Therefore, an additional unique contribution of this thesis is to examine whether group CBT-CP significantly increases quality of life.

1.11. Rationale, Significance and Aims of PhD Thesis

1.11.1. Rationale, significance and aims of Study I. While research has supported perfectionism dimensions being associated with depressive disorders, eating disorders and anxiety disorders using clinical samples (Egan et al., 2011), studies have not examined the relationships between perfectionism and pathological worry in individuals with GAD. Moreover, while research has examined whether perfectionism dimensions can predict whether individuals have disorders such as OCD, social phobia and panic disorder with or without agoraphobia (Antony, Purdon, et al., 1998), no studies have examined whether perfectionism dimensions can predict a principal diagnosis of GAD from a clinical sample with a range of diagnoses. If dimensions of perfectionism are found to be significantly associated with pathological worry and a principal diagnosis of GAD, this would provide further support for perfectionism being a transdiagnostic process (Egan et al., 2011). Such evidence would also provide a rationale for Study II of this thesis and future studies to investigate whether perfectionism interventions can reduce the symptoms

of GAD in addition to the symptoms of other disorders. In Study I of this PhD thesis, the relationships between perfectionism dimensions and pathological worry are investigated in individuals with elevated perfectionism and GAD who presented for perfectionism treatment. Furthermore, the utility of perfectionism dimensions in predicting a principal diagnosis of GAD is examined in a larger clinical sample with elevated perfectionism and a range of diagnoses who presented for perfectionism treatment.

1.11.2. Rationale, significance and aims of Study II. The argument of perfectionism being a transdiagnostic process implies that treatments that target perfectionism have the potential to simultaneously reduce the symptoms of multiple psychological disorders (Egan et al., 2011). While this transdiagnostic treatment may confer increased time efficiency for psychologists and reduced costs for clients (Craske, 2012; Egan et al., 2012), limited studies have examined the efficacy of CBT for perfectionism. Furthermore, the few RCTs in the area have all investigated CBT for perfectionism delivered in an individual format (Pleva & Wade, 2006; Riley et al., 2007; Steele & Wade, 2008). Only one of these RCTs utilised CBT strategies based on Shafran et al.'s (2002) maintenance model of clinical perfectionism (Riley et al., 2007). Although group therapy confers additional time and cost savings, as well as the potential for added therapeutic benefits relative to individual treatments (Bieling et al., 2006; Himle et al., 2003; Yalom, 1995; Yalom & Leszcz, 2005), no RCT has compared group CBT-CP to a separate control group in a clinical sample. It is important to conduct this study to determine whether group CBT-CP works (Chambless & Hollon, 1998). Therefore, in Study II of this PhD thesis, a randomised controlled design is used to examine the efficacy of group CBT-CP in a clinical sample. This is the most significant unique contribution of this thesis. Furthermore,

to date, perfectionism treatment trials have not included a quality of life measure. Thus, in Study II of this PhD thesis, the effect of group CBT-CP on quality of life is examined to provide an additional unique contribution to the literature.

CHAPTER 2

STUDY I

Examining the Associations between Perfectionism Dimensions, Pathological Worry and Generalised Anxiety Disorder in Individuals Presenting for Perfectionism Treatment

2.1. Overview of Study I

Dimensions of perfectionism have demonstrated significant relationships with major depressive disorder, bipolar I and II disorder, obsessive-compulsive disorder, eating disorders, personality disorders and anxiety disorders (Egan et al. 2011). In regard to anxiety disorders, studies in clinical samples have found that dimensions of perfectionism are significantly associated with social phobia and panic disorder with agoraphobia (Antony, Purdon, et al., 1998; Juster et al., 1996; Iketani et al., 2002a). Dimensions of perfectionism have also predicted whether individuals receive a diagnosis of social phobia or panic disorder with or without agoraphobia from a clinical sample with a range of diagnoses (Antony, Purdon, et al., 1998).

To date however, studies have not investigated the associations between perfectionism dimensions and pathological worry in adults with generalised anxiety disorder (GAD). Furthermore, research has not investigated whether perfectionism dimensions can predict a principal diagnosis of GAD from a clinical sample with a range of diagnoses. Examining the associations between perfectionism, pathological worry and GAD is important as evidence of significant relationships between these constructs would further support perfectionism being a transdiagnostic process (Egan et al., 2011). Such evidence would also provide a rationale for Study II of this PhD thesis and future studies to examine whether treatments targeting perfectionism can

decrease the symptoms of GAD in addition to the symptoms of other psychological disorders (Bieling, Summerfeldt, et al., 2004; Egan et al. 2011). In Study I of this PhD thesis, the relationships between perfectionism dimensions and pathological worry are investigated in adults with elevated perfectionism and GAD who presented for perfectionism treatment. Additionally, the utility of perfectionism dimensions in predicting a principal diagnosis of GAD is explored in a larger clinical sample with elevated perfectionism and a range of diagnoses who presented for perfectionism treatment.

2.2. Perfectionism, Pathological Worry and Generalised Anxiety Disorder

Worry is deemed to be pathological when it is perceived to be unrelenting, excessive, difficult to control and of a distressing nature (Stoeber & Joormann, 2001). Pathological worry is a defining feature of GAD, as is evident by the diagnostic criteria for GAD (DSM-5, APA, 2013, p.222) which include:

> A. "Excessive anxiety and worry (apprehensive expectation) occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance)"
>
> B. "The individual finds it difficult to control the worry"
>
> C. "The anxiety and worry are associated with three (or more) of the following six symptoms (with at least some symptoms having been present for more days than not for the past 6 months)…restlessness or feeling keyed up or on edge; being easily fatigued; difficulty concentrating or mind going blank; irritability; muscle tension; sleep disturbance".
>
> D: "The anxiety, worry or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning".

Findings from large scale studies have highlighted the prevalence of GAD (Kessler, Berglund, Demler, Jin, & Walters, 2005; Kessler, Chiu, et al., 2005; Kessler & Merikangas, 2004). Using data from the National Co-morbidity Survey Replication (Kessler & Merikangas, 2004), the lifetime prevalence of GAD was estimated to be 5.7 per cent (Kessler, Berglund, et al., 2005) and the 12-month prevalence was estimated to be 3.1 per cent (Kessler, Chiu, et al., 2005). The statistics from these studies have also indicated that GAD can be associated with high levels of distress and functional impairment (Kessler, Chiu, et al., 2005). Among individuals who had GAD in the last 12 months, nearly one third (32.9 per cent) of individuals were classified as having a severe level of the disorder. This classification was reserved for individuals who in the past 12 months had either attempted suicide with intent to die or those who had experienced extreme functional impairment. Moreover, nearly one half (44.6 per cent) of individuals were deemed to have a moderate level of GAD, which was defined by the presence of suicidal ideation, a suicide plan, or moderate functional impairment. The remaining 23.1 per cent were deemed to have a mild level of the disorder (Kessler, Chiu, et al., 2005). As the statistics in these studies are based on large sample sizes, this provides support for the reliability of these estimates. Given that GAD can be associated with these levels of distress and functional impairment, it is important for attention to be directed toward understanding the constructs associated with pathological worry as it occurs in GAD, with a view to targeting these constructs in treatments for this disorder.

Researchers have found various constructs to be associated with the presence and maintenance of pathological worry in GAD (Buhr & Dugas, 2006; Dugas et al., 1998; Wells, 1995; 1999). Dugas et al. (1998) postulated a cognitive model that

emphasised the role of four constructs in GAD: intolerance of uncertainty, beliefs about worry, poor problem orientation and cognitive avoidance. Wells' (1995; 1999) meta-cognitive model highlighted the role of positive and negative meta-beliefs about worry, as well as behaviours such as trying to control worry, checking, reassurance seeking and avoidance in the onset and maintenance of Type 1 and Type 2 worries. The constructs from these models have received empirical support as they have shown significant associations with pathological worry (e.g., Dugas et al., 2007; Dugas, LaDouceur, & Freeston, 1997; Wells & Carter, 1999) and found to differentiate between individuals with a diagnosis of GAD and those without this diagnosis (Cartwright-Hatton & Wells, 1997; Dugas et al., 1998; LaDouceur, Blais, Freeston, & Dugas, 1998). Treatments targeting these constructs have also resulted in reductions in the symptoms of GAD, which provides support for the maintaining role of these constructs in GAD (Dugas et al., 2010; LaDouceur et al., 2000; van der Heiden, Muris, van der Molen, 2012; Wells, Welford, King, Wisely, & Mendel, 2010).

Nevertheless, accumulating research suggests that the constructs specified in these cognitive models (Dugas et al. 1998; Wells, 1995; 1999) may not be the only constructs involved in pathological worry. Dimensions of perfectionism may also be associated with pathological worry. There are three arguments for why perfectionism dimensions may be associated with pathological worry in individuals with GAD. The first argument is that dimensions of perfectionism are associated with the symptoms of multiple psychological disorders (Egan et al., 2011); including anxiety disorders such as social phobia (Juster et al., 1996), and panic disorder with agoraphobia (Iketani et al., 2002a). Perfectionism has consequently been posited to be a transdiagnostic process (Egan et al., 2011; Harvey et al., 2004). It is therefore

reasonable for research to examine whether perfectionism is also related to the symptoms of GAD.

The second argument is that researchers have proposed links between perfectionism and worry for years (Flett, Madorsky, et al., 2002; Norman et al., 1998; Pratt, Tallis, & Eysenck, 1997; Shafran et al., 2002; Shafran et al., 2010). It has been argued that in some individuals, heightened worry and psychological distress may be caused by perfectionist striving for unrealistic goals and fear of mistakes (Flett, Madorsky, et al., 2002; Norman et al., 1998). Based on studies demonstrating that those with high worry took longer than those with low worry to make decisions when categorising ambiguous stimuli (Metzger, Miller, Cohen, Sofka, & Borkovec, 1990; Pratt et al., 1997; Tallis, Eysenck, & Matthews, 1991), researchers reported that worriers possessed elevated evidence requirements. Specifically, individuals who engaged in high levels of worry needed a greater amount of evidence before making a decision compared to individuals who worried to a lesser extent (Pratt et al., 1997; Tallis et al., 1991). Pratt et al. (1997) argued that this need for a greater amount of evidence may stem from perfectionism. When individuals are engaged in the worry process, they have unreasonably high standards where they seek to obtain a perfect solution. They require additional information to be completely certain that they are making the right decision before responding. As a perfect solution is often not obtainable, the individual continues to engage in the worry process without selecting an effective solution to the worry. Shafran et al. (2002) and Shafran et al. (2010) have also proposed links between clinical perfectionism and worry. These researchers contended that individuals with clinical perfectionism strive to attain personally demanding standards even when it leads to adverse consequences, some of which include worry, stress and anxiety. While this

literature has posited connections between perfectionism and worry, there needs to be greater empirical evidence to support the associations between dimensions of perfectionism and worry (Flett, Madorsky, et al., 2002; Norman et al., 1998; Pratt et al., 1997; Shafran et al., 2002; Shafran et al., 2010).

The third argument is that there is support for Self-Oriented Perfectionism (SOP), Socially-Prescribed Perfectionism (SPP), Concern over Mistakes (CM) and Doubts about Actions (DA) being related to pathological worry in student samples (Buhr & Dugas, 2006; Flett et al., 1994; Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001). While these findings cannot be generalised to clinical samples, they are worthy of consideration because they provide a rationale to extend this examination to clinical samples. Flett et al. (1994) found that SOP and SPP had significant positive correlations with the cognitive worry dimension of state anxiety as measured by the Endler Multidimensional Anxiety Scales (Endler et al., 1991). When each gender was examined separately, significant correlations between SPP and cognitive worry remained in females and males; however, the correlation between SOP and cognitive worry was only present in females. This provides support for SPP being related to cognitive worry. It also suggests that gender moderates the relationship between SOP and cognitive worry. Therefore, gender should be accounted for in future studies investigating the relationship between perfectionism dimensions and worry (Flett et al., 1994).

Buhr and Dugas (2006) examined the associations between SOP, SPP and pathological worry as measured by the Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990). SOP and SPP were each significantly associated with PSWQ scores after controlling for gender. SOP remained a significant positive predictor of PSWQ scores after controlling for demographics and intolerance of uncertainty,

whereas SPP did not. This is an important finding as it demonstrates that SOP explains additional variance in pathological worry to that accounted for by intolerance of uncertainty, which is one of the constructs in Dugas et al.'s (1998) model of GAD. It highlights that SOP is not always an adaptive form of perfectionism as has been previously contended (Stoeber & Otto, 2006). This finding is also important given that SOP is the dimension of Hewitt and Flett's (1991a) multidimensional perfectionism scale that best reflects Shafran et al.'s (2002) concept of clinical perfectionism. The findings of SPP no longer significantly predicting PSWQ after accounting for demographics and intolerance of uncertainty suggest that intolerance of uncertainty may at least partly explain the relationship between SPP and PSWQ (Buhr & Dugas, 2006). Future studies need to examine the role of intolerance of uncertainty in the relationship between SPP and pathological worry.

Frost et al.'s (1990) dimensions of perfectionism have also been related to measures of worry in student samples (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001). These studies are commendable because they investigated whether dimensions of perfectionism have relationships with worry after controlling for depression and certain types of anxiety. This is important given that perfectionism has exhibited associations with the symptoms of depression and various anxiety disorders in student and clinical samples (Egan et al., 2011). Kawamura et al. (2001) investigated the associations between maladaptive evaluative concerns (MEC = Concern over Mistakes + Doubts about Actions + Parental Criticism + Parental Expectations), Personal Standards (PS) and three anxiety factors. These anxiety factors had been factor analysed from seven specific anxiety measures and consisted of obsessive-compulsive disorder symptoms, post-

traumatic stress disorder symptoms and a combined construct of social anxiety, trait anxiety and worry. By Kawamura et al. (2001) exploring the relationships between MEC, PS and each of these anxiety factors, these researchers could ascertain whether MEC and PS were related to particular anxiety symptom types, rather than to the characteristics that occur in all types of anxiety. MEC had significant positive correlations with each anxiety factor; however, MEC only significantly predicted social anxiety/trait anxiety/worry after controlling for depression. PS was only associated with post-traumatic stress disorder symptoms and this became non-significant after controlling for depression. Kawamura et al. (2001) commented that these results supported MEC having a relationship with social anxiety/trait anxiety/worry, which cannot be explained by the relationship between perfectionism and depression (Enns et al., 2001; Kawamura et al., 2001).

A limitation of Kawamura et al.'s (2001) findings is that perfectionism was measured by the composite construct MEC. This makes it difficult to determine the specific perfectionism dimensions that have a relationship with this worry construct. Furthermore, pathological worry was included in a construct with social and trait anxiety, so it is possible that the finding emerged due to the associations that perfectionism has with trait anxiety (Hewitt & Flett, 1991a) and social anxiety (Frost et al., 1990) in student samples.

Studies by Stoeber and Joormann (2001) and Santanello and Gardner (2007) partially overcame the limitations of Kawamura et al.'s (2001) study by separating MEC into two composite subscales: CM + DA and PE + PC. These researchers then examined the relationships between CM + DA, PE + PC, PS and pathological worry as measured by the PSWQ after controlling for anxiety and depression (Santanello & Gardner, 2007; Stoeber & Joormann, 2001). Stoeber and Joormann (2001) found that

CM + DA had a significant relationship with PSWQ scores after accounting for depression and anxiety. PS was not significantly correlated with PSWQ scores. Santanello and Gardner (2007) similarly demonstrated that CM + DA was significantly related to PSWQ scores after accounting for depression, social anxiety and experiential avoidance. PS was not significantly associated with PSWQ scores. Thus, in these student samples CM + DA is the construct that has a relationship with pathological worry independent from depression and certain forms of anxiety. Nevertheless, as the combined construct of CM + DA was used in these studies, it is still not known whether it is CM, DA or both constructs that are associated with pathological worry after accounting for depression and anxiety. There needs to be a study that examines the utility of each separate construct in predicting pathological worry after anxiety and depression are controlled. Moreover, despite previous findings of gender moderating the relationship between perfectionism dimensions and pathological worry (Flett et al., 1994), gender was not controlled in this study, thus future studies need to control for this. Finally, due to the use of student samples, it is not known whether these findings generalise to clinical samples of individuals with GAD.

Another variable of interest that has not been directly examined in regard to pathological worry is clinical perfectionism as measured by the Clinical Perfectionism Questionnaire (CPQ; Fairburn et al., 2003b). As discussed, links have been theorised between clinical perfectionism, worry, anxiety and stress (Shafran et al., 2002; Shafran et al., 2010); however, there is limited research examining the associations between CPQ scores and these symptoms. Chang and Sanna (2012) examined the utility of CPQ in predicting anxiety and stress in a student sample. Anxiety was measured using the Beck Anxiety Inventory (Beck et al., 1988) and

stress was measured by the Perceived Stress Scale (Cohen et al., 1983). CPQ scores were a significant positive predictor of anxiety and stress after accounting for negative affect. While Chang and Sanna's (2012) findings have highlighted the associations between CPQ scores, anxiety and stress in a sample of students, these findings cannot be generalised to clinical populations. Furthermore, studies have not examined the relationship between CPQ scores and pathological worry in non-clinical or clinical samples. It would be of interest to examine whether a relationship exists between these constructs in a clinical sample after accounting for gender, anxiety and depression, as this would enable findings to be generalised to clinical populations. Evidence to support the CPQ being associated with pathological worry would also provide support for the validity of the CPQ as a measure of clinical perfectionism (Fairburn et al., 2003b).

In sum, three arguments have been presented for why perfectionism may be associated with pathological worry in individuals with GAD. First, perfectionism dimensions have been found to be associated with the symptoms of multiple disorders in clinical samples (Egan et al., 2011), therefore it is reasonable to examine whether perfectionism dimensions are also related to the symptoms of GAD. Second, theoretical links between perfectionism and worry have been proposed by researchers (Flett, Madorsky, et al., 2002; Norman et al., 1998; Pratt et al., 1997; Shafran et al., 2002; Shafran et al., 2010). Third, studies using student samples have found dimensions of perfectionism to be associated with pathological worry and in many of these studies these associations have remained after controlling for gender, anxiety and/or depression (Buhr & Dugas, 2006; Flett et al., 1994; Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001).

Given that pathological worry is a defining feature of GAD (DSM-5, APA, 2013) it would also be relevant to examine whether dimensions of perfectionism can predict a principal diagnosis of GAD from a clinical sample with a range of diagnoses. Research investigating the role of other constructs (e.g., intolerance of uncertainty) in pathological worry and GAD has examined whether such constructs can differentiate between individuals with and without GAD (Cartwright-Hatton & Wells, 1997; Dugas et al., 1998; LaDouceur et al., 1998). Moreover, studies have also examined whether perfectionism dimensions can predict whether individuals have other disorders, including obsessive-compulsive disorder, social phobia and panic disorder with or without agoraphobia (Antony, Purdon, et al., 1998). To date however, research has not investigated whether perfectionism dimensions can predict a principal diagnosis of GAD in a clinical sample with a range of diagnoses. It would be of interest to examine whether this relationship emerged after controlling for gender and depression, given that gender has moderated the association between perfectionism dimensions and pathological worry (Flett et al., 1994) and perfectionism dimensions have shown relationships with depression (Egan et al., 2011). It would be illogical to control for anxiety in this examination given that anxiety symptoms are part of the diagnostic criteria for GAD (DSM-5, APA, 2013).

2.3. Rationale, Significance, Aims and Hypotheses of the Current Study

The current study has two aims. The first aim is to explore the associations between perfectionism dimensions and pathological worry in adults with elevated perfectionism and GAD who presented for perfectionism treatment. This is the first study to examine these associations in a clinical sample. Evidence of significant relationships between perfectionism dimensions and pathological worry will provide a rationale for Study II of this thesis and future studies to investigate whether

perfectionism interventions can reduce the symptoms of GAD along with the symptoms of other disorders.

To overcome the limitation of previous studies using composite constructs of perfectionism (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001), this study examines the associations between single dimensions of perfectionism and pathological worry. Additionally, the relationship between a measure of clinical perfectionism and pathological worry is investigated, which has not before been examined. Importantly, this study will investigate whether perfectionism dimensions are related to pathological worry after controlling for gender, anxiety and depression, providing that these variables are first found to have significant zero-order correlations with pathological worry in this sample.

The theories and research discussed inform the current hypotheses. Hypothesis 1 is stated below and predicts associations between CM, PS, DA and pathological worry after controlling for gender, anxiety and depression. The prediction about CM is based on the theoretical links between concern over mistakes and pathological worry (Flett, Madorsky, et al., 2002), as well as findings of CM+DA being associated with pathological worry in non-clinical samples (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001), and CM being related to anxiety symptoms in clinical samples (Egan et al., 2011). The prediction about PS is based on the theoretical links between personal standards and pathological worry (Flett, Madorsky, et al., 2002; Pratt et al., 1997). Although PS was not associated with pathological worry in non-clinical samples (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001), two studies have found PS to be associated with anxiety symptoms in clinical samples with other anxiety disorders (Iketani et al., 2002a; 2002b). The prediction about DA is based on

CM+DA predicting pathological worry in non-clinical samples (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001) and DA being associated with anxiety symptoms in clinical samples (Egan et al., 2011).

H1. After controlling for gender, anxiety, and depression, CM, PS and DA will each predict a significant proportion of unique variance in pathological worry (PSWQ).

Hypothesis 2 is based on the theoretical links between clinical perfectionism and worry, anxiety and stress (Shafran et al., 2002; Shafran et al., 2010), as well as the findings of CPQ scores significantly predicting anxiety and stress in a non-clinical sample (Chang & Sanna, 2012).

H2. After controlling for gender, anxiety and depression, CPQ scores will predict a significant proportion of unique variance in pathological worry (PSWQ).

The second aim of this study is to investigate whether perfectionism dimensions significantly predict a principal diagnosis of GAD in a larger clinical sample with elevated perfectionism and a range of diagnoses who presented for perfectionism treatment. This is the first study to examine the utility of perfectionism in predicting a principal diagnosis of GAD. Importantly, this study will examine the predictive utility of perfectionism in this disorder after controlling for gender and depression, providing that these variables first demonstrate significant zero-order correlations with a principal diagnosis of GAD. As previously discussed, anxiety will not be controlled even it is shown to have a significant zero-order correlation with a principal diagnosis of GAD. Hypothesis 3 is based on pathological worry

being a defining feature of GAD (DSM-5, APA, 2013) and the reasoning that the perfectionism dimensions hypothesised to be associated with pathological worry (CM, PS, DA and CPQ scores) would also be significant predictors of a principal diagnosis of GAD.

H3. After controlling for gender and depression, CM, PS, DA and CPQ scores will each predict a significant proportion of unique variance in the probability of having a principal diagnosis of GAD.

2.4. Method

2.4.1. Participants

The first aim of this study was investigated with 36 adults (81% female, 19% male) who had elevated perfectionism and a DSM-IV-TR (APA, 2000) diagnosis of GAD. The mean age of participants was 30.86 years (*SD* = 11.30). These 36 participants were a subset of a larger sample (*N* = 42) of adults with elevated perfectionism and a range of psychological disorders who were at baseline assessment for participation in a group CBT for clinical perfectionism treatment trial. This treatment trial is described in Study II. Participants had self-referred to this trial in response to letters and advertising fliers circulated to general practitioners, psychiatrists, psychologists, universities and workplaces across the Perth metropolitan area. Participants who had met the inclusion criteria of the trial were invited for a baseline assessment. As a result of one of the inclusion criteria of the trial, all participants had elevated perfectionism as defined by receiving a score of higher than 24.7 on the CM subscale (Frost et al., 1990). Elevated CM was used as the inclusion criterion rather than elevated CPQ score because to date limited studies have used the CPQ (Steele et al., 2013). CM has been frequently used in the

literature and has clinical relevance due to its associations with the symptoms of numerous disorders (Egan et al., 2011). The cut-off score of 24.7 was determined by averaging the mean CM scores from six studies that had explored perfectionism in anxiety disorder samples as cited in Egan et al.'s (2011) review. Eighty-three per cent of adults in this sample had a principal diagnosis of GAD as they had rated their worries and anxiety as being the most distressing of their reported symptoms. Seventeen per cent had GAD as their second or third diagnosis as they had rated the symptoms of at least one other disorder as currently causing them greater distress than their worry and anxiety. The average number of psychological disorders per person was 2.36 (*SD* =1.10).

The second aim of this study was investigated with the entire sample of 42 adults (81% female, 19% male) who had elevated perfectionism and a range of psychological disorders and were at baseline assessment for participation in the clinical perfectionism treatment trial described above. All participants had elevated perfectionism defined by a score of higher than 24.7 on the CM subscale (Egan et al., 2011; Frost et al., 1990). The mean age of this sample was 31.47 years (*SD* = 11.01). Ninety per cent of the sample had at least one psychological disorder based on DSM-IV-TR criteria (APA, 2000). These disorders were GAD, social phobia, panic disorder, panic disorder with agoraphobia, obsessive-compulsive disorder, major depressive disorder, bipolar II disorder, bulimia nervosa, eating disorder not-otherwise specified and alcohol dependence. Seventy-one per cent of the sample had a principal diagnosis of GAD. Ten per cent of adults did not have a current psychological disorder based on DSM-IV-TR criteria (APA, 2000); however, these adults each had depression in partial or full remission. The average number of disorders per person was 2.071 (*SD* = 1.26).

All participants gave written informed consent to take part in perfectionism treatment research. This research, from which the data for this study was derived, was approved by the Curtin University Human Research Ethics Committee and complied with the Helsinki Declaration (World Medical Association, 2008).

2.4.2. Measures

Concern over Mistakes, Personal Standards and Doubts about Actions subscales (Frost et al., 1990). The CM, PS and DA subscales from Frost et al.'s (1990) multidimensional perfectionism scale were used. For each subscale, items are rated on 5-point Likert scales ranging from *strongly disagree* to *strongly agree* and responses for that subscale are summed to produce the total subscale score. Higher scores on the CM, PS and DA subscales denote greater concern over mistakes, personal standards and doubts about actions respectively. Each of these subscales has been found to have high internal consistency (CM= .88; PS = .83; DA = .77; Frost et al., 1990), as well as high validity (Antony, Purdon, et al., 1998; Bardone-Cone, 2007; Egan et al., 2011). For the current sample of 36 participants, Cronbach's alpha was .91(CM), .82 (PS) and .73 (DA); for the sample of 42 participants, it was .90 (CM), .81 (PS) and .72 (DA).

Clinical Perfectionism Questionnaire (CPQ; Fairburn et al., 2003b). The CPQ contains 12 items that examine one's degree of clinical perfectionism throughout the past month. Items are rated on 4-point Likert scales with response options ranging from *not at all* to *all of the time.* Items 2 and 8 are reverse coded and all items are summed to produce the CPQ score. Higher CPQ scores signify higher clinical perfectionism. Since this measure examines clinical perfectionism during the past month it is sensitive to clinical change (Riley et al., 2007). It has high test-retest reliability, internal consistency and validity in clinical and non-clinical samples

(Chang & Sanna, 2012; Egan, Shafran, et al., 2014; Steele, O'Shea, et al., 2011; Steele et al., 2013; Stoeber & Damian, in press). In the current study, Cronbach's alpha was .74 for the sample of 36 participants and .77 for the sample of 42 participants.

Mini International Neuropsychiatric Interview, Version 5.0 (MINI; Sheehan et al., 1998). The MINI is a structured interview used to diagnose psychological disorders based on the criteria of the DSM-IV-TR (APA, 2000). When data was being collected for this research, the DSM-5 (APA, 2013) had not yet been released. The MINI has high levels of test-retest reliability, internal consistency and validity (Sheehan et al., 1997). For this study, the MINI was utilised to examine whether participants met the diagnostic criteria for GAD. These structured interviews were all conducted by the primary researcher (Handley), who at the time was blind to the scores each participant had received on the self-report measures. The primary researcher has a Master of Clinical Psychology degree and has had four years of experience administering the MINI. Given that there was only one interviewer, it was not possible to calculate the inter-rater reliability of the MINI in this study; however, the primary researcher discussed participants' diagnoses in supervision with an experienced clinical psychologist (Egan) who confirmed the accuracy of these diagnoses.

Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990). The 16-item PSWQ examines the uncontrollability, excessiveness and generality of clinical worry. Statements are rated on 5-point Likert scales. Items 1, 3, 8, 10 and 11 are reverse coded and then scores on all items are summed. Higher PSWQ scores signify high levels of clinical worry. The PSWQ has been found to have high test-retest reliability, internal consistency (Meyer et al., 1990) and discriminant validity

(Brown, Antony, & Barlow, 1992; Meyer et al., 1990). Consistent with the PSWQ being a measure of pathological worry, measures of other constructs theorised to be involved in pathological worry (e.g., meta-worry) have been found to significantly predict PSWQ scores (Wells & Carter, 1999). In the current study, Cronbach's alpha was .88 for the sample of 36 participants and .91 for the sample of 42 participants.

Beck Depression Inventory-II (BDI-II; Beck et al., 1996). The BDI-II contains 21 items that measure the symptoms of depression. For each item, participants select one statement from a group of statements that describe how they have felt in regard to a depressive symptom over the past two weeks. The scores of these statements are summed and higher scores signify more severe depressive symptoms. The BDI-II has high internal consistency in outpatient (.92) and college (.93) samples. This measure has also been found to have high test-retest reliability and validity (Beck et al., 1996; Buckley, Parker, & Heggie, 2001). The BDI-II is deemed to be the gold standard measure of depression and has higher internal consistency than other measures of depression, such as the depression subscale of the Depression, Anxiety and Stress-21 Scale (Beck et al., 1996; Lovibond & Lovibond, 1995). In the current study, Cronbach's alpha was .92 for both the sample of 36 participants and the sample of 42 participants.

Depression, Anxiety and Stress Scale-21 (DASS-21; Lovibond, & Lovibond, 1995). The anxiety subscale of the DASS-21 was utilised in this study. This subscale contains seven items that examine the level of anxiety symptoms experienced throughout the past week. Items are rated on 4-point Likert scales ranging from *did not apply to me at all* to *applied to me very much or most of the time*. Item scores are summed and higher scores denote more severe anxiety symptoms. This subscale has been found to have high internal consistency and

moderately high concurrent validity (Antony, Bieling, Cox, Enns, & Swinson, 1998). In the current study, Cronbach's alpha was .86 for the sample of 36 participants and .85 for the sample of 42 participants.

2.4.3. Statistical Methods

To explore the first aim, zero-order correlations were first computed between pathological worry and the perfectionism dimensions, gender, anxiety and depression. At least two significant correlations were required to warrant a linear regression analysis (hierarchical or simultaneous). The pattern of significant zero-order correlations (described in the results section) indicated that hierarchical linear regression analyses should be conducted (Tabachnick & Fidell, 2007). The first regression analysis examined whether Frost et al.'s (1990) perfectionism dimensions significantly predicted pathological worry on the PSWQ after controlling for gender, anxiety and depression. The second regression analysis examined whether clinical perfectionism as assessed by the CPQ (Fairburn et al., 2003b) was a significant predictor of pathological worry on the PSWQ after controlling for gender, anxiety and depression. The utility of CPQ scores in predicting PSWQ was examined in a separate regression analysis as the CPQ is a more recent measure and the association between clinical perfectionism and PSWQ had not previously been explored in non-clinical or clinical samples.

To explore the second aim, zero-order correlations were calculated between the probability of having a principal diagnosis of GAD and the perfectionism dimensions, pathological worry, gender, anxiety and depression. At least two significant correlations were required to warrant a binary logistic regression analysis (hierarchical or simultaneous). The zero-order correlations (described in the results

section) yielded only one significant correlation, which made the binary logistic regression analysis redundant (Tabachnick & Fidell, 2007).

The Pearson correlation between the binary variables (gender and GAD) and each of the other variables is best known as the point-biserial correlation (Tabachnick & Fidell, 2007). Based on the present sample sizes, the point-biserial and Pearson correlations would have to be moderate to large, which is equivalent to a ρ of approximately .4, to have an 80% likelihood of reaching statistical significance at an alpha-level of .05 (GPower Version 3.1; Faul, Erdfelder, Lang, & Buchner, 2007). The most complex linear regression model contained five predictors. Based on the present sample sizes, the relationships between each of the five predictors and the dependent variable would also have to be moderate to large, which is equivalent to an sr^2 of around .16, to have an 80% likelihood of reaching statistical significance at an alpha-level of .05 (GPower Version 3.1; Faul et al., 2007).

2.5. Results

2.5.1. Assumption testing

Hierarchical linear regression analysis has three assumptions: linearity, normality and homoscedasticity of the residuals (Tabachnick & Fidell, 2007). For each regression analysis, scatterplots of the standardised studentised residuals against the standardised predicted values were examined to test whether these assumptions had been violated. For each scatterplot, the points appeared to be randomly distributed around the central horizontal axis; no systematic patterns were evident. This suggested that the assumptions of linearity, normality and homoscedasticity were met (Tabachnick & Fidell, 2007). Examination of the range of Cook's values for each scatterplot indicated that no value exceeded 1, which suggested that no

participant's data had a disproportionate impact on the regression parameters. The tolerance values for each predictor in each regression model were adequately high to suggest that predictors were not multicollinear (Tabachnick & Fidell, 2007).

2.5.2. The Associations between Perfectionism and Pathological Worry

In regard to the first aim of the study, Table 1 displays the means, standard deviations and zero-order correlations for gender, the perfectionism dimensions, pathological worry, anxiety and depression. CM, PS and CPQ scores each displayed significant moderate relationships with PSWQ scores. DA did not have a significant correlation with PSWQ scores. As gender, anxiety and depression were each found to be significantly correlated with PSWQ scores, these variables were controlled by entering them as covariates in the following hierarchical linear regression models.

When conducting the first hierarchical linear regression model, gender, CM and PS were entered on Step 1, and DASS-anxiety and BDI-II were entered on Step 2. Gender was entered from the outset of the analysis as it was important to see whether CM and PS were related to pathological worry after controlling for this variable. DASS-anxiety and BDI-II were entered at Step 2 of the model rather than at Step 1 so one could first examine whether any relationships between the perfectionism dimensions and pathological worry emerged after controlling for gender, and could then determine whether these relationships remained after controlling for anxiety and depression. As BDI-II scores were available for 34 participants, this analysis was performed on a sample of 34 participants. Table 2 displays the results of the first hierarchical linear regression analysis.

Table 1

Means (Standard Deviations) and Zero-order Correlations among Gender, Perfectionism, Pathological Worry, Anxiety and Depression in Participants with Generalised Anxiety Disorder (n= 36)

Measure	Mean (*SD*)	Gender	CM	PS	DA	CPQ	PSWQ	DASS - Anx	BDI-II [a]
Gender	-	-	.30	.12	.00	-.01	.39*	.21	.07
CM	33.19 (6.47)		-	.32	.44**	.52**	.68**	.58**	.49**
PS	28.61 (4.46)			-	.51**	.58**	.49**	.35*	.38*
DA	15.86 (2.85)				-	.60**	.30	.57**	.43*
CPQ	32.19 (8.54)					-	.49**	.60**	.56**
PSWQ	67.28 (8.54)						-	.41*	.35*
DASS-Anx	12.83 (10.65)							-	.73**
BDI-II [a]	19.44 (11.51)								-

Note. CM = Concern over Mistakes subscale of the Frost Multidimensional Perfectionism Scale (FMPS); PS = Personal Standards subscale of the FMPS; DA = Doubts about Actions subscale of the FMPS; CPQ = Clinical Perfectionism Questionnaire; PSWQ = Penn State Worry Questionnaire; DASS-Anx = Anxiety subscale of the Depression, Anxiety and Stress Scale-21; BDI-II = Beck Depression Inventory-II.

[a] Descriptive statistics and correlations for the BDI-II were calculated for 34 participants.

*$p < .05$ **$p < .01$

Table 2

Hierarchical Linear Regression Analysis Predicting Pathological Worry from Perfectionism in Individuals with Generalised Anxiety Disorder (n=34)

Predictors	*Adjusted* R^2	▲ R^2	*B*	95% CI	*Beta*	sr^2
Step 1	.58**					
Gender			4.77	-0.15, 9.70	0.24	.05
CM			0.66	0.34, 0.98	0.53	.23***
PS			0.54	0.09, 0.98	0.29	.08*
Step 2	.56**	.02				
Gender			5.07	-0.08, 10.22	0.25	.05
CM			0.74	0.36, 1.12	0.59	.21***
PS			0.57	0.09, 1.04	0.31	.08*
DASS-Anx			-0.13	-0.42, 0.16	-0.17	.01
BDI-II			0.03	-0.23, 0.29	0.05	.00

Note. ▲ R^2 = Change in R^2; *B* = unstandardised regression coefficient; *Beta* = standardised regression coefficient; sr^2 = part-correlation squared; CM = Concern over Mistakes subscale of the FMPS; PS = Personal Standards subscale of the FMPS; DA = Doubts about Actions subscale of the FMPS; PSWQ = Penn State Worry Questionnaire; BDI-II = Beck Depression Inventory-II; DASS-Anx = Anxiety subscale of the Depression, Anxiety and Stress Scale-21.
* $p < .05$ ** $p < .01$ *** $p < .001$

As seen in Table 2, at Step 1 of the analysis, gender accounted for a non-significant 5 per cent of the variance in pathological worry (sr^2 x 100 = 5, $p = .057$). CM uniquely accounted for a significant 23 per cent of the variance in pathological worry (sr^2 x 100 = 23, $p < .001$), with higher scores on CM significantly predicting higher scores on pathological worry. PS uniquely accounted for a significant 8 per cent of the variance in pathological worry (sr^2 x 100 = 8, $p = .019$), with higher scores on PS significantly predicting higher scores on pathological worry. The sr^2 values of CM and PS suggested that CM was a stronger predictor of pathological

worry than PS. When DASS-anxiety and BDI-II were entered at Step 2, CM uniquely explained a significant 21 per cent of the variance in pathological worry (sr^2 x 100 = 21, $p < .001$), and PS uniquely explained a significant 8 per cent of the variance in pathological worry (sr^2 x 100 = 8, $p = .021$). Higher scores on CM and PS each significantly predicted higher pathological worry scores. The sr^2 values suggested that CM was a stronger predictor of pathological worry than PS.

When conducting the second hierarchical linear regression analysis, gender and CPQ scores were entered at Step 1, and DASS-anxiety and BDI-II were entered at Step 2. As BDI-II scores were only available for 34 participants, the hierarchical linear regression analysis was performed on a sample of 34 participants. Table 3 displays the results of the second hierarchical linear regression analysis.

Table 3

Hierarchical Linear Regression Analysis Predicting Pathological Worry from Clinical Perfectionism Questionnaire scores in Individuals with GAD (n=34)

Predictors	*Adjusted* R^2	▲ R^2	*B*	95% CI	*Beta*	sr^2
Step 1	.35***					
Gender			9.00	3.24, 14.76	0.45	.20**
CPQ			0.68	0.23, 1.14	0.43	.18**
Step 2	.32**	.03				
Gender			9.29	3.05, 15.54	0.46	.19**
CPQ			0.63	0.03, 1.23	0.40	.09*
DASS-Anx			-0.08	-0.45, 0.28	-0.11	.00
BDI-II			0.13	-0.19, 0.44	0.18	.01

Note. GAD = Generalised Anxiety Disorder ▲ R^2 = Change in R^2; CI = confidence interval; *B* = unstandardised regression coefficient; *Beta* = standardised regression coefficient; sr^2 = part-correlation squared; CPQ = Clinical Perfectionism Questionnaire; PSWQ = Penn State Worry Questionnaire; DASS-Anx = Anxiety subscale of the Depression, Anxiety and Stress Scale-21; BDI-II = Beck Depression Inventory-II. * $p < .05$. ** $p < .01$ *** $p < .001$

As seen in Table 3, at Step 1, gender accounted for a significant 20 per cent of the variance in pathological worry scores (sr^2 x 100 = 20, p = .003) with the positive direction of the regression coefficient indicating that females received higher pathological worry scores than males. CPQ scores accounted for a significant 18 per cent of the variance in pathological worry (sr^2 x 100 = 18, p = .005) where higher CPQ scores significantly predicted higher pathological worry scores. When DASS-anxiety and BDI-II were entered at Step 2, CPQ scores explained a significant 9 per cent of the variance in pathological worry scores (sr^2 x 100 = 9, p = .041). Higher CPQ scores significantly predicted higher pathological worry scores.

2.5.3. The Associations between Perfectionism and a Principal Diagnosis of GAD

In relation to the second aim of this study, Table 4 displays the means and standard deviations of the perfectionism dimensions, pathological worry, anxiety and depression. These descriptive statistics were calculated for the sub-sample of participants with a principal diagnosis of GAD (N = 30), as well as for the entire sample (N =42). Table 5 displays the zero-order correlations among gender, the perfectionism dimensions, pathological worry, anxiety, depression and a principal diagnosis of GAD. There was a significant moderate correlation between DA and a principal diagnosis of GAD. CM, PS and CPQ scores were not significantly correlated with a principal diagnosis of GAD. While anxiety was significantly correlated with a principal diagnosis of GAD, it was not necessary to control for this variable as previously discussed. As gender and depression did not exhibit significant correlations with a principal diagnosis of GAD, a binary logistic regression model was redundant.

Table 4

Means and (Standard Deviations) for Perfectionism, Pathological Worry, Anxiety and Depression in the Sample with a Principal Diagnosis of GAD and the Full Sample.

	CM	PS	DA	CPQ	PSWQ	DASS-Anx	BDI-II[a]
Principal GAD sample (*n*=30)	33.47 (6.07)	29.07 (4.23)	16.43 (2.56)	32.23 (5.35)	67.50 (8.57)	14.20 (11.10)	20.29 (12.04)
Full sample (*n*=42)	33.07 (6.06)	28.40 (4.23)	15.62 (2.83)	31.57 (5.62)	65.95 (9.72)	12.00 (10.17)	18.89 (11.13)

Note. CM = Concern over Mistakes subscale of the Frost Multidimensional Perfectionism Scale (FMPS); PS = Personal Standards subscale of the FMPS; DA = Doubts about Actions subscale of the FMPS; CPQ = Clinical Perfectionism Questionnaire; PSWQ = Penn State Worry Questionnaire; DASS-Anx = Anxiety subscale of the Depression, Anxiety and Stress Scale-21; BDI-II = Beck Depression Inventory-II.

[a] Descriptive statistics for the BDI-II were calculated for 28 participants in the principal GAD sample and 38 participants in the full sample.

Table 5

Zero-order Correlations between Gender, Perfectionism, Pathological Worry, Anxiety, Depression and a Principal Diagnosis of GAD in the Full Sample (*n* = 42)

	Gender	CM	PS	DA	CPQ	PSWQ	DASS-anx	BDI-II[a]	Principal GAD
Gender	-	.27	.13	-.00	.01	.34*	.21	.05	.10
CM		-	.31*	.42**	.48**	.54**	.58**	.49**	.10
PS			-	.45**	.55**	.43**	.34*	.35*	.25
DA				-	.60**	.42**	.58**	.46**	.46**
CPQ					-	.54**	.61**	.55**	.19
PSWQ						-	.41**	.37*	.26
DASS-anx							-	.74**	.35*
BDI-II								-	.21
Principal GAD									-

Note. CM = Concern over Mistakes subscale of the Frost Multidimensional Perfectionism Scale (FMPS); PS = Personal Standards subscale of the FMPS; DA = Doubts about Actions subscale of the FMPS; CPQ = Clinical Perfectionism Questionnaire; PSWQ = Penn State Worry Questionnaire; DASS-anx = Anxiety subscale of the Depression, Anxiety and Stress Scale-21; BDI-II = Beck Depression Inventory-II.

[a] Correlations for the BDI-II were calculated for 38 participants.

* $p < .05$ ** $p < .01$

2.6. Discussion

The first aim of this study was to examine the relationships between perfectionism dimensions and pathological worry in adults with elevated perfectionism and GAD who presented for perfectionism treatment. Dimensions of perfectionism as measured by CM, PS and CPQ scores each significantly predicted

pathological worry and remained significant after accounting for gender, anxiety and depression. These findings uniquely contribute to the literature, as previous research has not examined the associations between perfectionism dimensions and pathological worry in individuals with GAD after controlling for gender, anxiety and depression.

The finding of CM being significantly related to pathological worry after accounting for anxiety and depression supports theoretical links between concern over mistakes and worry (Flett, Madorsky, et al., 2002). It also concurs with the findings of previous studies utilising student samples (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001). The current finding provides evidence that the relationship between CM and pathological worry in individuals with GAD is important of its own accord and not an artefact of the relationships CM has with anxiety and depression (Antony, Purdon, et al., 1998; Enns et al., 2001; Kawamura et al., 2001). Importantly, the current finding generalises to clinical populations of individuals with elevated perfectionism and GAD.

Furthermore, this is the first study to find that PS has a significant relationship with pathological worry in a clinical sample. This finding provides empirical support for the theorised links between elevated personal standards and pathological worry (Flett, Madorsky, et al., 2002; Pratt et al., 1997). As this finding emerged in a clinical sample but not in student samples, this may reflect PS being differentially associated with pathological worry in non-clinical and clinical samples (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001). The current finding is also noteworthy as it is only the third finding of PS being significantly related to anxiety symptoms in a clinical sample. While Iketani et al.

(2002a; 2002b) found that PS was related to panic disorder with agoraphobia symptoms, most studies have reported that PS was not significantly related to anxiety symptoms (Egan et al., 2011).

The current finding of PS being significantly related to pathological worry in individuals with GAD indicates that PS is not a purely positive construct as has been put forward by Stoeber and Otto (2006). Stoeber and Otto (2006) argued that particularly when maladaptive components of perfectionism were controlled (CM, DA, PE, PC, SPP), the positive achievement striving dimension of perfectionism (PS, O, SOP) is a positive construct associated with positive characteristics. However, in the current study, CM was statistically controlled by being entered as a predictor in the hierarchical linear regression analysis, but the significant relationship between PS and pathological worry still emerged. This significant association also remained after controlling for gender, depression and anxiety. This suggested that a unique relationship between PS and pathological worry was present that cannot be attributed to the relationship reported between positive achievement striving and depression (Hewitt & Flett, 1993). The current findings add to those of Iketani et al. (2002a; 2002b) in demonstrating that PS has a significant relationship with certain anxiety symptoms in clinical samples. Together with studies showing PS to be consistently associated with eating disorder symptoms (Bardone-Cone et al., 2007; Bardone-Cone et al., 2008), as well as studies showing that positive achievement striving components such as SOP are associated with depression (Hewitt & Flett, 1993; Norman et al., 1998), this adds support for positive achievement striving perfectionism being maladaptive in some circumstances (Egan et al., 2012).

The significant association between CPQ scores and pathological worry further contributes to the literature as it demonstrates for the first time that clinical

perfectionism is significantly associated with pathological worry in a clinical sample. This relationship remained after controlling for gender, anxiety and depression, which supports the relationship between clinical perfectionism and pathological worry being important of its own accord. This finding is consistent with the theoretical links between clinical perfectionism and adverse consequences such as worry, anxiety and stress (Shafran et al. 2002; Shafran et al., 2010) and provides support for the validity of the CPQ as a measure of clinical perfectionism (Fairburn et al., 2003b). This finding also extends those of Chang and Sanna (2012) by highlighting that clinical perfectionism is not just significantly related to anxiety and stress, but also has a unique relationship with pathological worry and that this relationship is present in a clinical sample with GAD.

Collectively, the findings of perfectionism as measured by CM, PS and CPQ scores significantly predicting pathological worry after controlling for gender, anxiety and depression add to the growing body of research supporting perfectionism being a process which occurs across psychological disorders (Egan et al., 2011). These findings provide a rationale for Study II of this thesis and future studies to investigate whether perfectionism treatments can decrease GAD symptoms in addition to the symptoms of other psychological disorders. The current findings also provide justification for future studies to investigate whether adding a treatment module targeting perfectionist standards and concern over mistakes can improve the efficacy of psychological treatments based on current models of GAD (Dugas et al., 1998; Wells, 1995; 1999).

In the current study, a significant correlation between DA and pathological worry did not emerge. This differs from previous studies that found this relationship in student samples (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber &

Joormann, 2001). There are many reasons why these non-significant findings may have occurred. First, the previous studies examining the relationships between Frost et al.'s (1990) perfectionism dimensions and pathological worry only explored the associations between composite constructs of perfectionism (i.e., MEC, CM+DA) and pathological worry (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001). It is therefore possible that the significant association between the composite construct of perfectionism and pathological worry reported in student samples is an artefact of the significant association between CM and pathological worry (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001). If this is the case, this would be congruent with the current findings of CM being a significant predictor of pathological worry. A second possibility is that due to all adults in this sample having elevated perfectionism, the data may have been affected by restriction of range on the study variables, which may have weakened the associations between the predictors and the dependent variable (Tabachnick & Fidell, 2007). A third possibility is that due to the sample size, a Type II error may have occurred where the study had insufficient power to detect a relationship between DA and pathological worry in this sample, even if one is present in the population. The non-significant zero-order correlation then resulted in DA being excluded from the first hierarchical linear regression model. A Type II error is quite likely given that the zero-order correlation between DA and pathological worry had a significance value of $p = .07$ (Tabachnick & Fidell, 2007). Future studies need to examine the relationships between these perfectionism dimensions and pathological worry in a larger sample of individuals with GAD and include participants with a wider range of perfectionism scores to overcome the limitations of the current study.

The second aim of this study was to examine whether perfectionism dimensions significantly predicted a principal diagnosis of GAD in a clinical sample of adults with elevated perfectionism and a range of diagnoses who presented for perfectionism treatment. The findings revealed that DA was a significant positive predictor of a principal diagnosis of GAD. Interestingly, CM, PS and CPQ scores were not significant predictors of a principal diagnosis of GAD. The significant predictive utility of DA is consistent with this perfectionism dimension being an important construct in GAD, which again supports perfectionism being a transdiagnostic process (Egan et al., 2011). As DA has been found to be a significant construct in obsessive-compulsive disorder and social phobia (Antony, Purdon, et al., 1998; Rheaume et al., 1995), the current finding of DA being a significant positive predictor of a principal diagnosis of GAD may indicate a cognitive process that is shared across these disorders. Nevertheless, the specific function of DA in a principal diagnosis of GAD requires clarification in future research as it is unusual that DA did not significantly predict pathological worry, yet it was a significant predictor of a principal diagnosis of GAD. These findings can be reconciled by again proposing that the non-significant correlation between DA and pathological worry arose due to a Type II error (Tabachnick & Fidell, 2007); however, future research is needed to clarify this.

It is also unusual that CM, PS and CPQ scores were not significantly related to a principal diagnosis of GAD given that each of these dimensions of perfectionism significantly predicted pathological worry. One possibility for the non-significant zero-order correlations between these perfectionism dimensions and pathological worry is a restriction of range on the study variables. Additionally, as 71 per cent of the adults in this sample met the criteria for a principal diagnosis of GAD, the

sample may not have been sufficiently diverse for these variables to arise as significant predictors (Tabachnick & Fidell, 2007). Future investigation is required using samples that have greater diversity.

Some additional limitations of this study require discussion. First, as all participants had elevated perfectionism, findings of CM, PS and CPQ scores being significant predictors of pathological worry can only be generalised to adults with elevated perfectionism and GAD; whereas the finding of DA being a significant predictor of a principal diagnosis of GAD can only be generalised to adults with elevated perfectionism. Additionally, this study did not incorporate a non-clinical control group, which prevented the perfectionism levels of individuals with GAD from being compared to those of non-clinical controls. Future research needs to include a sample with GAD and a sample of non-clinical controls. Furthermore, while this study controlled for gender, anxiety and depression, it did not control for other constructs associated with pathological worry and GAD, such as intolerance of uncertainty and meta-beliefs about worry (Dugas et al., 1997; Dugas et al., 1998; LaDouceur et al., 1998; LaDouceur, 2000; Wells, 1995; 1999; Wells & Carter, 1999). Future studies in clinical samples need to explore whether perfectionism dimensions account for additional variance in GAD symptomatology to that accounted for by these established constructs (Dugas et al., 1998; Wells, 1995; 1999). Finally, the cross-sectional design of this study prevents inferences about the directions of effect. Future research needs to utilise prospective designs to examine whether dimensions of perfectionism temporally precede pathological worry and GAD.

Nonetheless, the current study has still provided a significant contribution to the literature by demonstrating that significant relationships exist between CM, PS,

CPQ scores and pathological worry in individuals with elevated perfectionism and GAD. Additionally, this study has revealed that DA can significantly predict a principal diagnosis of GAD in a clinical sample with elevated perfectionism and a range of diagnoses. These findings support perfectionism being a transdiagnostic process and provide a rationale for Study II of this thesis and other studies to investigate whether perfectionism interventions can reduce the symptoms of GAD in addition to the symptoms of other psychological disorders (Bieling, Summerfeldt, et al., 2004; Egan et al., 2011).

CHAPTER 3

STUDY II

Examining the Efficacy of Group Cognitive Behavioural Therapy for Clinical Perfectionism

3.1. Overview of Study II

A promising implication of perfectionism being a transdiagnostic process is that interventions that target perfectionism may ameliorate the symptoms of multiple psychological disorders (Egan et al., 2011). To date, few randomised controlled trials (RCTs) have explored the efficacy of cognitive behaviour therapy (CBT) for perfectionism and each of these RCTS examined CBT for perfectionism administered in an individual format (e.g., Pleva & Wade, 2006; Riley et al., 2007; Steele & Wade, 2008). Only one of these RCTs used CBT strategies based on Shafran et al.'s (2002) model of clinical perfectionism (Riley et al., 2007). As yet, no RCT has evaluated the efficacy of CBT for clinical perfectionism delivered in a group format (group CBT-CP). This is important to investigate as group treatments offer greater time efficiency and cost savings (APS, 2013; Himle et al., 2003), as well as the potential for therapeutic advantages compared to individual treatments (Bieling et al., 2006; Yalom, 1995; Yalom & Leszcz, 2005). In Study II of this thesis, an RCT is conducted to examine the efficacy of group CBT-CP in a clinical sample. In addition to examining the effect of this treatment on perfectionism and psychopathology, the impact of group CBT-CP on quality of life is explored as previous perfectionism trials have not included a quality of life outcome measure (Riley et al., 2007; Steele & Wade, 2008).

3.2. Cognitive Behavioural Therapy for Perfectionism in Non-Clinical Samples

There is a substantially smaller body of research on CBT for perfectionism compared to CBT for specific disorders (Egan et al., 2012) and the limitations of these studies prevent the generalisation of findings. Four RCTs have examined CBT for perfectionism in non-clinical samples (Arpin-Cribbie et al., 2008; Arpin-Cribbie et al., 2012; Pleva & Wade, 2006; Radhu et al., 2012). These studies utilised a variety of CBT protocols for perfectionism; however, none of these protocols were based on Shafran et al.'s (2002) model of clinical perfectionism. Arpin-Cribbie et al. (2008) explored the efficacy of an online intervention for perfectionism in a sample of 83 students with elevated Perfectionism Cognition Inventory (PCI) scores. This intervention consisted of stress management techniques as well as CBT strategies for perfectionism that focussed on altering perfectionist beliefs and the impact of these beliefs on mood (Arpin-Cribbie et al., 2008). The online intervention produced significantly greater reductions in Socially-Prescribed Perfectionism (SPP) and depression compared to a pure stress management condition and a control condition. Arpin-Cribbie et al. (2012) conducted a second RCT to examine this online treatment in 77 students with elevated PCI scores. This intervention led to significantly greater reductions in Concern over Mistakes (CM), Self-Oriented Perfectionism (SOP), SPP and PCI scores compared to a pure stress management condition and a control condition; as well as significantly greater reductions in anxiety and depression compared to a control condition.

Radhu et al. (2012) compared a web-based CBT intervention for perfectionism to a waitlist control condition in a sample of 24 students with elevated PCI scores. This intervention focused on altering the beliefs associated with perfectionism and the influence of these beliefs on mood (Radhu et al., 2012). The

web-based intervention resulted in significantly greater reductions in automatic thoughts and anxiety sensitivity relative to a waitlist control condition. These studies in student samples have demonstrated that web-based CBT interventions have produced reductions in dimensions of perfectionism and psychopathology; however, due to the use of non-clinical samples, findings cannot be generalised to clinical populations (Arpin-Cribbie et al., 2008; Arpin-Cribbie et al., 2012; Radhu et al., 2012).

In Pleva and Wade's (2006) RCT, guided self-help CBT for perfectionism was compared to pure self-help CBT for perfectionism in a non-clinical sample of 49 adults. While both interventions were based on Antony and Swinson's (1998) CBT self-help book; participants in the guided self-help condition received minimal therapist guidance, whereas those in the pure self-help condition only followed written guidelines. Guided self-help CBT for perfectionism produced significantly greater improvements in obsessive-compulsive symptoms relative to pure self-help CBT for perfectionism. Post-treatment decreases in CM and depression were evident in both conditions and the guided self-help condition also displayed post-treatment reductions in PS and DA. Decreases in perfectionism were maintained at 3-month follow-up. While this study provided support for self-help versions of CBT for perfectionism, the non-clinical sample prevents generalisation of findings to clinical populations.

3.3. Cognitive Behavioural Therapy for Perfectionism in Clinical Samples

Two studies used multiple baseline single case series designs to examine the effectiveness of CBT for clinical perfectionism (CBT-CP) in clinical samples (Egan & Hine, 2008; Glover et al. 2007). This CBT-CP was derived from Shafran et al.'s (2002) model of clinical perfectionism. Glover et al. (2007) examined a sample of

nine adults with elevated Clinical Perfectionism Questionnaire (CPQ) scores, as well as depression or an anxiety disorder. Following CBT-CP there were statistically and clinically significant changes in SOP, CPQ scores and Dysfunctional Attitude Scale-Self Criticism (DAS-SC) scores. There were also clinically significant reductions in depression. Egan and Hine (2008) examined a sample of four adults who had elevated total perfectionism scores on the Frost Multidimensional Perfectionism Scale (FMPS), as well as depression or an anxiety disorder. After CBT-CP, there were clinically significant reductions in total FMPS scores and CM. While these studies have produced preliminary evidence for the effectiveness of CBT-CP in clinical samples, in both studies sample sizes were small and there were no control groups (Egan & Hine, 2008; Glover et al., 2007). This reduces the extent to which these findings can be attributed to CBT-CP.

Two RCTs have examined individual CBT for perfectionism in clinical samples (Riley et al., 2007; Steele & Wade, 2008). Steele and Wade (2008) investigated the efficacy of guided self-help CBT for perfectionism (Antony & Swinson, 1998) in comparison to CBT for bulimia nervosa (Cooper, 1993, as cited in Steele & Wade, 2008) and a condition containing dismantled mindfulness components (Segal et al., 2002) in 48 women with eating disorders. Significant reductions in CM, PS, depression and eating disorder symptoms as well as significant improvements in self-esteem were reported by participants in all conditions. Guided self-help CBT for perfectionism tended to produce greater effect sizes for the non-targeted symptoms of depression and anxiety compared to the other conditions. These trends have clinical relevance as they are in accord with perfectionism having a transdiagnostic role (Egan et al., 2011). Post-treatment gains in all outcomes except PS were maintained at 6-month follow-up. This study is to be

commended for its use of a clinical sample; however, a limitation is the absence of a pure control condition.

Riley et al. (2007) examined the efficacy of CBT for clinical perfectionism (CBT-CP) in a sample of 20 adults deemed to have clinical perfectionism based on a semi-structured interview. Seventy per cent of these participants had diagnoses of an anxiety disorder or depression. The treatment protocol was derived from Shafran et al.'s (2002) model of clinical perfectionism. CBT-CP resulted in significantly greater decreases in CPQ scores compared to a waitlist control condition. Significant changes in measures of multidimensional perfectionism did not occur. Post-intervention scores on the CPQ, the Clinical Perfectionism Examination (CPE), total FMPS, SOP, as well as depression and anxiety were significantly lower than baseline scores and were still lower than baseline scores at 4-month follow-up. Clinically significant decreases in scores on the CPE were reported by 75 per cent of adults and the number of depression and anxiety disorder diagnoses had halved following the intervention. While this treatment utilised a waitlist control condition, the sample size was small and only 70 per cent of the sample had clinical diagnoses.

3.4. Group Cognitive Behavioural Therapy for Perfectionism

As CBT targeting perfectionism may concurrently reduce the symptoms of multiple disorders (Bieling et al., 2004; Egan et al., 2011), this treatment may offer greater time efficiency for the psychologist and client, as well as decreased cost for the client compared to the sequential administration of disorder-specific treatments (Craske, 2012; Egan et al., 2012). If this transdiagnostic intervention is delivered in a group format instead of an individual format, this could lead to further time efficiency for the psychologist and added cost savings for the client (APS, 2013; Himle et al., 2003). A group CBT format may also offer therapeutic advantages

compared to an individual CBT format due to several mechanisms of change proposed to occur in the context of a group (Bieling et al., 2006; Yalom, 1995; Yalom & Leszcz, 2005). As discussed in the literature review, these mechanisms of change are inclusion, optimism, group learning, shifting self-focus, correction of maladaptive relational patterns, group cohesiveness and the processing of emotions in a group setting (Bieling et al., 2006; Yalom, 1995; Yalom & Leszcz, 2005).

Despite these potential benefits of group CBT for perfectionism, very few studies have examined group delivery of this treatment. Moreover, the only studies in the area have all utilised designs with lower internal validity than an RCT, which prevents findings from being confidently attributed to the intervention (Egan & Stout, 2007; Kutlesa & Arthur, 2008; Steele et al., 2013). Kutlesa and Arthur (2008) conducted a quasi-experimental study examining group CBT for perfectionism in 90 students. The 8-week CBT course included techniques by Beck (1993) as well as interpersonal process techniques by Yalom (1995). As this treatment was not based on Shafran et al.'s (2002) model, it was not group CBT for *clinical* perfectionism. Participants in the group CBT for perfectionism condition reported significantly greater reductions in SOP, Other-Oriented Perfectionism (OOP), anxiety and depression relative to those in a psychology class and a career-planning condition. However, this study has limitations such as self-selection to conditions, significant differences between conditions in baseline variables and the absence of a follow-up assessment, which reduce internal validity. It also used a student sample, which prevents generalisation to clinical populations (Kutlesa & Arthur, 2008).

Two preliminary studies have examined group CBT-CP in clinical samples (Egan & Stout, 2007; Steele et al., 2013). The treatment protocols for both of these studies were based on the maintenance model of clinical perfectionism (Shafran et

al., 2002). Steele et al.'s (2013) group CBT-CP also targeted performance-related behaviours based on Shafran et al.'s (2010) updated model of clinical perfectionism. Each study produced promising findings; however, did not include separate control conditions. Egan and Stout's (2007) case series methodology study was conducted with three individuals who had elevated total FMPS, PS and CM as well as depression or an anxiety disorder. Trends of decreases in total FMPS, CM, PS, anxiety and depression were observed, with one of the three adults exhibiting clinically significant declines in depression. Steele et al. (2013) conducted a case series design with 21 adults who had elevated CM scores as well as an anxiety disorder or current or past depression. Psycho-education about perfectionism did not lead to statistically significant changes; however, following group CBT-CP, participants reported statistically significant decreases in CPQ scores, PS, CM, DAS-SC scores, anxiety, stress and depression. Post-treatment changes were maintained at 3-month follow-up, with clinically significant change in CPQ scores reported by 32 per cent of participants. These studies are to be commended for utilising clinical samples; however, a limitation is the absence of a separate control condition, which means that findings could have occurred due to confounds such as the passage of time (Egan & Stout, 2007; Steele et al., 2013). To overcome these limitations, there needs to be an RCT examining the efficacy of group CBT-CP in a clinical sample. This would enable findings to be more confidently attributed to group CBT-CP; however, to date this RCT has not been conducted.

3.5. Exploring the Effect of Group CBT-CP on Quality of Life

Studies have indicated that individuals with psychological disorders have a lower quality of life than those without psychological disorders (Mond et al., 2005; Rapaport et al., 2005). Moreover, having co-morbid psychological disorders has also

been found to be related to a lower quality of life than the presence of one or no psychological disorder (Pirkola et al., 2009). As interventions targeting perfectionism have been proposed to decrease the symptoms of multiple psychological disorders (Egan et al., 2011), such interventions may also increase quality of life. To date, no perfectionism treatment trial has incorporated a quality of life outcome measure, therefore it is not known whether CBT for perfectionism can improve quality of life.

3.6. Rationale, Aims and Significance of the Current Study

Group CBT-CP has the potential to concurrently reduce the symptoms of multiple disorders (Egan et al., 2011) in a manner that provides increased time efficiency for psychologists, reduced costs for clients (APS, 2013; Craske, 2012; Egan et al., 2012; Himle et al., 2003) and the potential for additional therapeutic benefits (Bieling et al., 2006; Yalom, 1995; Yalom & Leszcz, 2005); however, as yet, no RCT has examined group CBT-CP in a clinical sample. The primary aim of this study is to conduct an RCT that compares group CBT-CP to a waitlist control condition in a clinical sample. This can provide information about whether group CBT-CP works, in regard to producing improvements in perfectionism and related psychopathology (Chambless & Hollon, 1998; Egan et al., 2011); or whether the treatment at least does no harm compared to not receiving any treatment (Lilienfeld, 2007). The efficacy of an intervention is established once two independent studies find the intervention to provide greater benefit than no treatment (Chambless & Hollon, 1998). If group CBT-CP is found to produce significant changes, this would be the first study to contribute toward establishing the efficacy of group CBT-CP (Chambless & Hollon, 1998). Furthermore, to date, published perfectionism treatment trials have not incorporated a quality of life outcome measure (e.g., Pleva

& Wade, 2006; Riley et al., 2007; Steele & Wade, 2008). Therefore, a secondary aim of this study is to explore whether group CBT-CP significantly increases quality of life. This adds to the literature by indicating whether group CBT-CP can improve overall wellbeing in addition to reducing psychological symptoms.

3.7. Hypotheses

A number of hypotheses about the effects of group CBT-CP were generated. Hypothesis 1 is based on group CBT-CP targeting the maintaining factors of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010), as well as previous findings of group CBT-CP producing reductions in CPQ scores and other perfectionism dimensions such as PS, CM and DAS-SC scores (e.g., Steele et al., 2013).

H1. There will be significant Group x Time interactions such that participants receiving group CBT-CP will show significantly greater therapeutic changes in all perfectionism outcomes (CPQ, CM, PS, DA, DAS-SC, distress, interference) between pre-test and post-test than participants in the waitlist control group.

Hypothesis 2 is based on findings of perfectionism being associated with depression, eating disorders and anxiety disorders (Egan et al., 2011). The findings of Study I of this thesis also informed this hypothesis by demonstrating that significant associations occurred between CM, PS, CPQ scores, DA and GAD symptomatology. Hypothesis 2 is also consistent with Shafran et al.'s (2002) proposition that CBT-CP assists participants to become less reliant on judging their self-worth primarily on achievement, which should produce increases in self-esteem.

H2. There will be significant Group x Time interactions such that participants receiving group CBT-CP will show significantly greater decreases in measures of psychopathology (depression, eating disorder and anxiety symptoms) and significantly greater increases in self-esteem between the pre-test and the post-test than participants in the waitlist control group.

Hypothesis 3 is based on findings of psychological disorders being associated with a lower quality of life (Mond et al., 2005; Pirkola et al., 2009; Rapaport et al., 2005), and findings of CBT-CP being associated with reductions in psychological symptoms (Riley et al., 2007; Steele et al., 2013).

H3. There will be a significant Group x Time interaction such that participants receiving group CBT-CP will show significantly greater increases in quality of life between the pre-test and the post-test than participants in the waitlist control group.

In regard to Hypothesis 4, it is logical to predict that when the waitlist control group receives group CBT-CP, they will demonstrate comparable changes to those shown by the intervention group.

H4. Once the waitlist control group receives group CBT-CP, they will demonstrate significant reductions in measures of perfectionism and psychopathology and significant increases in self-esteem and quality of life between their pre- and post-test, which will be comparable to the pre-post changes demonstrated by the treatment group.

Hypothesis 5 is based on findings showing that treatment gains from interventions targeting perfectionism are maintained at follow-up (Pleva & Wade, 2006; Riley et al., 2007; Steele & Wade, 2008; Steele et al., 2013).

H5. For the entire sample, post-intervention changes in measures of perfectionism, psychopathology, self-esteem and quality of life will be maintained at 3-month and 6-month follow-ups.

Hypotheses 6-9 make predictions about reliable and clinically significant change. It is anticipated that the changes specified in Hypotheses 1 – 4 would not only happen at a group level but also at an individual level (Chambless & Hollon, 1998; Jacobson & Truax, 1991). Hypotheses 6 - 9 are based on group CBT-CP targeting the maintaining factors of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010) and the literature of perfectionism being a transdiagnostic process (Egan et al., 2011). These hypotheses are also informed by propositions of CBT-CP assisting participants to make their self-esteem less reliant on achievement, which should translate into increases in self-esteem (Shafran et al., 2002). Moreover, Hypotheses 6- 9 are based on findings of CBT-CP resulting in clinically significant change in CPQ scores (Glover et al., 2007; Riley et al., 2007; Steele et al., 2013) and CM (Egan & Hine, 2008); as well as CBT-CP leading to recovery from psychological disorders (Riley et al., 2007).

H6. A significantly higher proportion of individuals in the group CBT-CP condition will demonstrate pre-post reliable change in measures of perfectionism,

psychopathology (depressive, anxiety and eating disorder symptoms), self-esteem and quality of life compared to those in the waitlist control condition.

H7. A significantly higher proportion of individuals in the group CBT-CP condition will experience pre-post clinically significant change in clinical perfectionism (CPQ scores) and Concern over Mistakes (CM) relative to those in the waitlist control condition.

H8. A significantly higher proportion of individuals in the group CBT-CP condition will demonstrate pre-post recovery from their psychological disorder(s) (i.e., will no longer meet their pre-treatment diagnosis at post-treatment) relative to those in the waitlist control condition.

H9. Once the waitlist control group receives group CBT-CP, the proportions of individuals showing reliable change, clinically significant change and recovery from psychological disorders will be comparable to that of the treatment group.

3.8. Method

3.8.1. Participants

3.8.1.1. Power analysis and sample size. The primary hypotheses (Hypotheses 1 to 3) predict Group x Time interactions. In Riley et al.'s (2007) RCT the Group x Time interaction for CPQ scores was 'large' (Cohen's d = 1.36; Cohen, 1988). G*Power (Version 3.1; Faul et al., 2007) was utilised to provide an estimate of the number of participants needed for an 80% chance of detecting a 'moderate to large' interaction (i.e., f = .29) between group (treatment, control) and time (pre-test,

post-test) at an alpha-level of .05. G*Power generated an estimate of 26 participants (13 participants per group). As the Group x Time interaction was the effect requiring the greatest number of participants in the analyses, 26 participants was therefore deemed to be adequate to detect the effects predicted in the other hypotheses, providing that these effects were also 'moderate to large' (Faul et al., 2007).

These sample estimates could be affected by participant attrition (Holden et al., 2008). Fortunately, the Generalised Linear Mixed Model (GLMM; the statistical procedure utilised to test the current hypotheses) is less sensitive to participant attrition than standard statistical procedures used to analyse behavioural change, such as repeated measures ANOVA (Holden et al., 2008). This is because GLMM is not dependent on participants providing data at each assessment period (Holden et al., 2008). Rather, the GLMM maximum likelihood procedure is a full information estimation procedure, which utilises all of the data available at each assessment period. Use of this procedure decreases sampling bias and the need for missing data to be replaced (Holden et al., 2008).

GLMM can utilise the data that is available at each assessment period primarily because time (pre, post) is interpreted as a Level 1 variable, which is nested within participant at Level 2 (Holden et al., 2008). Although GLMM can compensate for participant attrition, the primary researcher deemed it sensible to recruit an additional 14 participants (N = 40, 20 per group) to ensure that the GLMM analysis had adequate power to capture 'moderate' Group x Time interactions (Holden et al., 2008).

3.8.1.2. Recruitment. Participants self-referred in response to letters and advertising fliers circulated to general practitioners, psychiatrists, psychologists, universities and workplaces across the metropolitan area of Perth, Australia. The

covering letter and advertisement flyer are displayed in Appendices A and B respectively. Participants were required to be over 18 years of age and needed to have elevated perfectionism as determined by a score larger than 24.7 on the CM subscale of the FMPS (Frost et al., 1990). Even though this study trialled group CBT for *clinical* perfectionism, to date limited studies have used the CPQ (Fairburn et al., 2003b). Consequently, the inclusion criterion for this trial was based on elevated CM as it has been frequently reported in the perfectionism literature and has clinical relevance due to its associations with multiple psychological disorders (Egan et al., 2011). Elevated CM was also used as an inclusion criterion in Steele et al.'s (2013) study of group CBT-CP. As there are currently no norms for measures of perfectionism, the cut-off score of 24.7 was determined by averaging the mean CM scores from six studies that examined perfectionism in anxiety disorder samples, which are referred to in Egan et al.'s (2011) review. Another inclusion criterion for this study was that participants needed to be willing to refrain from external psychotherapy between baseline and 6-month follow-up. Furthermore, participants taking anti-depressant medication were required to be on a stable dose of this medication for one month before the study and throughout the trial. The latter two criteria were employed to ensure that any treatment effects exhibited after group CBT-CP could be attributed to the intervention, rather than to the effects of external psychotherapy or medication.

Participants were excluded from this study if they met the criteria for moderate or high suicidality, self-harm, psychosis, substance abuse, substance dependence, anorexia nervosa or a body mass index lower than 17.5, as assessed by the Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1998). Excluded participants were referred to suitable treatment services.

3.8.2. Design and Procedure

The design of this research is an RCT where one active treatment (group CBT-CP) is compared to a waitlist control condition. The design of this RCT is displayed in Figure 3 and is written in accordance with CONSORT guidelines (Moher et al., 2010). As Figure 3 also includes information about the flow of participants through the study, this figure is presented in the participant flow section of this chapter on page 180. Individuals who expressed interest in this study were sent an information sheet, consent forms and the CM subscale of the FMPS (Frost et al., 1990). The information sheet and consent forms are displayed in Appendices C, D and E respectively. Participants who met the inclusion criterion of elevated CM and consented to participate in the research were telephoned by the primary researcher (Handley) to further evaluate their eligibility. Individuals who did not meet the elevated CM inclusion criterion were recommended external treatment services. The telephone screen involved administering the Mini International Neuropsychiatric Interview-Screen (Sheehan & LeCrubier, 2006) and assessing whether participants met the remaining inclusion criteria for the research. Individuals meeting the exclusion criteria were referred to appropriate treatment services.

Participants who were eligible for the research attended a 1.5 hour baseline assessment with the primary researcher where they completed a questionnaire package, were asked five questions about their perfectionism (Steele et al., 2013) and were administered the MINI (Sheehan et al., 1998). The five perfectionism questions are listed in Appendix F. Eligible participants were then randomised to the group CBT-CP or waitlist control condition. Randomisation was accomplished using randomised number lists created by Saghei's (2004) Random Allocation Software Version 1.0. The number and size of groups were entered to ensure equivalent group

sizes (Steele & Wade, 2008). Twenty-one participants were randomised to the group CBT-CP condition and 21 were randomised to the waitlist condition.

Participants in the group CBT-CP condition (n = 21) received eight sessions of group CBT-CP over eight weeks. This was delivered by running two therapy groups; one group had 10 members and one group had 11 members. Participants in the waitlist condition (n = 21) received no psychological treatment for eight weeks. Participants from the group CBT-CP condition had their post-treatment assessment, whereas participants from the waitlist condition had their post-waitlist assessment. These assessments were conducted by the primary researcher and involved participants completing a questionnaire package and being administered the MINI (Sheehan et al., 1998). This was the key point at which group CBT-CP was compared to the waitlist control condition because after this point there was no longer a bona-fide control condition against which intervention effects could be assessed (Tabachnick & Fidell, 2007). Since the primary researcher conducted all assessments and ran all therapy groups, it was not possible for the assessor to be blind to participants' condition when conducting the post-waitlist and post-treatment assessments.

After the waitlist control participants had completed their post-waitlist assessment, they received the eight sessions of group CBT-CP over eight weeks. This treatment was delivered by running two therapy groups; one group had 10 members and one group had 11 members. This was followed by a post-treatment assessment (this treated group henceforth referred to as the 'treated control group'). Participants from the initial treatment group and the treated control group attended follow-up assessments 3-months and 6-months after their post-treatment assessments. These follow-up assessments were conducted by the primary researcher

and involved participants completing the questionnaire package and being administered the MINI (Sheehan et al., 1998). This RCT was conducted and written in accordance with CONSORT guidelines (Moher et al., 2010). Ethics approval was received from the Curtin University Human Research Ethics Committee (Approval Number: HR75/2011) and this study was registered as a clinical trial with the Australian and New Zealand Clinical Trials Registry (2007).

3.8.2.1. Treatment

The group CBT-CP treatment comprised of eight 2-hour sessions of group therapy administered by two co-facilitators over an eight week period. Treatment sessions were held at the Curtin University Psychology and Speech Clinic. The CBT-CP material was derived from Shafran et al.'s (2010) book 'Overcoming perfectionism: a self-help guide using cognitive behavioural techniques', which was adapted for delivery in a group setting. The same CBT protocol was previously employed in a pilot trial of group CBT-CP utilising a different sample (Steele et al., 2013). This treatment protocol was derived from the maintenance model of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010)

The objectives of the first session were to introduce participants to the group, provide participants with psycho-education about clinical perfectionism, socialise participants to the maintenance model of clinical perfectionism (Shafran et al., 2010) and explore motivation to change. The psycho-education component consisted of discussing the features of clinical perfectionism, how it differs from healthy striving, the range of difficulties co-occurring with perfectionism and the potential causes of perfectionism (Shafran et al., 2010). The maintenance model of clinical perfectionism was explained and participants were given an opportunity to complete their individual maintenance model using a case study example for guidance

(Shafran et al., 2010). Motivation to change perfectionism was explored through a group discussion about the advantages and disadvantages of perfectionism as well as the advantages and disadvantages of changing perfectionism (Shafran et al., 2010). The objectives of the second session were to assist participants to identify their areas of perfectionism, introduce participants to self-monitoring of their perfectionist thoughts and behaviours, discuss common behaviours related to perfectionism and examine the accuracy of various perfectionist beliefs (e.g., the harder an individual works, the better they will do) (Shafran et al., 2010).

Sessions 3 to 8 introduced participants to cognitive-behavioural strategies that targeted the maintaining factors of clinical perfectionism outlined in Shafran et al.'s (2010) model. Session 3 introduced participants to behavioural surveys and behavioural experiments and demonstrated how these strategies can be used to challenge the perfectionist beliefs that underpin inflexible standards and perfectionist behaviours (Shafran et al., 2010). Session 4 discussed the maintaining roles of dichotomous thinking and rigid rule setting in clinical perfectionism and provided strategies such as looking at performance on a continuum, as well as behavioural experiments to assist in replacing rules with guidelines (Shafran et al., 2010). Session 5 provided an explanation of the common cognitive biases that maintain clinical perfectionism, such as negative filter and discounting the positive. Participants were then taught cognitive-behavioural strategies to challenge these biases. Such strategies included broadening attention and completing diaries to highlight the positive components of one's performance. Participants were socialised to thought diaries as a strategy to challenge unhelpful cognitions and construct rational cognitions (Shafran et al., 2010).

The primary objective of Session 6 was to discuss the maintaining role of procrastination in clinical perfectionism and introduce participants to strategies to reduce procrastination. These strategies included thought diaries, behavioural experiments, coping statements, imagery restructuring, dividing tasks into chunks, realising that action precedes motivation and problem-solving. Secondary objectives were to provide participants with strategies for time management and to highlight the importance of pleasant event scheduling (Shafran et al., 2010). Session 7 focussed on the detrimental impact of self-criticism and its maintaining role in clinical perfectionism. Strategies were then provided to reduce self-criticism and increase self-compassion. These strategies included the use of thought diaries to identify self-criticism, applying friendship values to oneself to increase self-compassion, as well as the use of compassionate voice index cards and the acceptance technique to reduce self-criticism (Shafran et al., 2010). Session 8 focused on the detrimental effect of self-esteem being overly reliant on achievement and presented participants with strategies to develop additional means from which to derive their self-esteem. Such strategies included setting flexible and realistic goals, making goals in new areas of life and completing diaries that focus attention on achievement. An additional objective of this session was to discuss strategies to maintain treatment gains such as re-visiting the readings and helpful exercises, as well as discussing set-back management and relapse prevention (Shafran et al., 2010).

3.8.2.2. Therapists

Three psychologists administered the group CBT-CP in this research. The first psychologist was the primary researcher (Handley) who has a Master of Clinical Psychology degree and delivered the group CBT-CP in Steele et al.'s (2013) previous trial. This psychologist conducted four therapy groups. The remaining two

psychologists were female post-graduate students in the Master of Clinical Psychology program. These post-graduate students each co-facilitated two therapy groups with the primary researcher. Prior to delivering the group CBT-CP, the post-graduate students received a package of training material to read and underwent a 2-hour training session with one of the authors of the treatment protocol (Egan). The training material contained Shafran et al.'s (2010) book, as well as readings about perfectionism as a transdiagnostic process (Egan et al., 2011), cognitive-behavioural therapy (Rees, 2010), therapeutic factors in group psychotherapy (Yalom & Leszcz, 2005) and conceptualising and constructing behavioural experiments (Bennett-Levy et al., 2004; Rouf, Fennell, Westbrook, Cooper, & Bennett-Levy, 2004). The 2-hour training session included discussion of the definition and maintenance cycle of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010), an overview of the eight group CBT-CP sessions, as well as discussion about specific issues related to running group CBT-CP, such as the influence of clients' cultural backgrounds on how their clinical perfectionism may present. The co-facilitators were each given a DVD to watch, which included two of the co-authors of the CBT-CP treatment (Egan and Shafran) role playing the main therapy techniques embodied in the CBT-CP treatment (Shafran et al., 2010).

Prior to delivering each group CBT-CP session, the primary researcher provided each co-facilitator with a script that detailed the session components the co-facilitator was to deliver. This ensured that all aspects of the session were covered and also meant that the co-facilitators were covering the same content across CBT-CP groups. All psychologists received weekly supervision by a clinical psychologist who was a co-author of the treatment protocol (Egan) to further ascertain that the

group CBT-CP protocol was correctly delivered and to trouble-shoot any difficulties that emerged with clients.

3.8.2.2. Treatment Adherence and Session Quality

Five randomly selected video-tapes of the group therapy sessions from this study were rated by two clinical psychologists who were external to this research. Each of these clinical psychologists has over a decade of clinical experience. As established measures assessing adherence to group CBT-CP were not available in the literature, the primary researcher (Handley) constructed a session checklist that consisted of the key objectives of each group CBT-CP session. A similar approach of checklist construction was employed in an RCT of group and individual CBT for obsessive-compulsive disorder (Anderson & Rees, 2007). In the current study, prior to adherence being rated, the checklist was examined by the co-author of the CBT-CP treatment manual (Egan) to ensure it had a high degree of content validity. Adherence to each objective in a session was rated on a 7-point Likert scale that ranged from (1) *not at all covered* to (7) *completely covered.* This session checklist is included in Appendix G. Once the external clinical psychologists had rated the checklist, the inter-rater reliability of this measure was calculated and found to be strong (r = .89). In the current study, mean adherence to treatment protocol across sessions was rated as 6.71/7 (SD = 0.977).

Session quality was rated using nine items that assessed therapist behaviours (e.g., warmth, empathy) from the Collaborative Study Psychotherapy Rating Scale-6 (CSPRS-6; Evans, Piasecki, Kriss, & Hollon, 1984). These items formed the factor subscale ‘collaborative structure’ and were previously found to have adequate inter-rater reliabilities (.72, .82; Startup & Shapiro, 1993). The external clinical psychologists rated the session quality of five video-taped therapy sessions. In the

current study, the mean scores for therapist behaviours were: supportive encouragement = 6.6/7 (*SD* = 0.52); warmth: 6.1/7 (*SD* = 0.87); rapport: 5.5/7 (*SD* = 1.08); empathy: 5.8/7 (*SD* = 0.92); formality: 5.8/7 (*SD* = .63); conveyance of expertise: 5.6/7 (*SD* = 0.97); collaboration: 4.7/7 (*SD* = 1.83); relating improvement to cognitive change: 5.5/7 (*SD* = 1.43); and encouragement of independence: 5.4/7 (*SD* = 1.07).

3.8.3. Measures

Mini-Screen (Sheehan & Lecrubier, 2006). This screening measure contains 21 questions that assess whether participants meet the first one or two key symptoms of a psychological disorder according to the DSM-IV-TR (APA, 2000). Participants respond 'yes' or 'no' to each question. This measure was utilised in the telephone screen to provide initial information about participants' psychological difficulties.

Clinical Perfectionism Questionnaire (CPQ; Fairburn et al., 2003b). The Clinical Perfectionism Questionnaire contains 12 items that examine one's degree of clinical perfectionism throughout the past month. This measure was described in detail in Study I.

Concern over Mistakes, Personal Standards and Doubts about Actions subscales (Frost et al., 1990). The Concern over Mistakes, Personal Standards and Doubts about Actions subscales of the Frost Multidimensional Perfectionism Scale (Frost et al., 1990) were described in detail in Study I. As in Steele et al.'s (2013) study, these multidimensional perfectionism measures were included in the current study to better enable findings to be compared to previous perfectionism treatment trials (e.g., Riley et al., 2007; Steele & Wade, 2008; Steele et al., 2013).

Dysfunctional Attitudes Scale-Self Criticism (DAS-SC; Imber et al., 1990; Weissman & Beck, 1978). This perfectionism subscale was developed from Imber et al.'s (1990) factor analysis of Weissman and Beck's (1978) Dysfunctional Attitudes Scale. It contains 15 items that examine the perception individuals have of themselves and others when their standards are not reached. Individuals rate their agreement with each statement on 7-point Likert scales that range from *totally disagree* to *totally agree*. Item responses are summed to produce a total score, with higher scores on this subscale reflecting greater perfectionism (Imber et al., 1990; Weissman & Beck, 1978). The DAS-SC has demonstrated high internal consistency in a clinical sample (Cronbach's alpha = .94; Steele et al., 2013), as well as high levels of stability over 18-months (Blatt et al., 1995). The DAS-SC has been found to provide an accurate measure of the maladaptive self-critical components of perfectionism (Dunkley et al., 2004) and has demonstrated incremental predictive validity (Dunkley et al., 2006; 2009). In the current study, DAS-SC had a Cronbach's alpha of .93.

Distress and Interference Scales (Brown, DiNardo, & Barlow, 1994). Two 1-item scales were adapted from the Anxiety Disorders Interview Schedule-Adult version (Brown et al., 1994). The first scale assesses the degree of distress associated with perfectionism. Individuals responded on a 9-point Likert scale ranging from *no distress at all* to *very severe distress.* The second scale assesses the degree of interference associated with perfectionism. Individuals responded on a 9-point Likert scale ranging from *no interference at all* to *very severe interference.* Higher scores on the distress and interference scales reflect greater distress and interference associated with perfectionism respectively. As each scale contained only 1 item, their internal consistencies could not be calculated.

Depression, Anxiety and Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995). This 21-item scale measures symptoms of depression, anxiety and stress experienced throughout the previous week. Participants rate the degree to which they have experienced symptoms on 4-point Likert scales that range from *did not apply to me at all* to *applied to me very much or most of the time.* Items are summed to form three subscale scores: depression (Items 3, 5, 10, 13, 16, 17 and 21), anxiety (Items 2, 4, 7, 9, 15, 19 and 20), and stress (Items 1, 6, 8, 11, 12, 14 and 18). Higher scores reflect more severe symptoms. These subscales have been found to have high internal consistencies in a clinical sample (Cronbach's alpha = .94 for depression, .87 for anxiety, and .91 for stress; Antony, Bieling, et al., 1998). The concurrent validity of this measure is also moderately high (Antony, Purdon, et al., 1998). In the present study, Cronbach's alpha was .86 for each of the three subscales.

Eating Disorders Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994). This 36-item questionnaire measures concerns regarding weight, shape and eating, as well as engagement in disordered eating behaviours during the past month. Participants answer items on 7-point Likert scales or by indicating whether they have partaken in certain eating behaviours. Items are summed to form four subscale scores: restraint, weight concern, eating concern and shape concern, as well as a total score. Higher scores reflect greater eating pathology. The EDE-Q has demonstrated high levels of internal consistency in non-clinical (Cronbach alphas = .73 – .93; Mond, Hay, Rogers, Owen, & Beaumont, 2004b) and clinical samples (Cronbach alphas = .70 - .90; Peterson et al., 2007). It has been found to have good concurrent and criterion validity (Mond, Hay, Rogers, Owen, & Beaumont, 2004a). In the present study, Cronbach alphas were .84 (restraint), .85 (weight concern), .86 (eating concern), .91 (shape concern) and .96 (EDE-Q total).

Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990). The Penn State Worry Questionnaire consists of 16 items which examine the uncontrollability, excessiveness and generality of clinical worry. This measure was described in detail in Study I.

Beck Depression Inventory-II (Beck et al., 1996). The Beck Depression Inventory-II contains 21 items that measure the symptoms of depression. This measure was described in detail in Study I.

Fear of Negative Evaluation Scale-Brief Version (FNE-B; Collins, Westra, Dozois, & Stewart, 2005). This measure is adapted from the scales of Watson and Friend (1969) and Leary (1983) and provides an assessment of social-evaluative anxiety. Participants rate the degree to which items are characteristic of them on 5-point Likert scales that range from *not at all characteristic of me* to *extremely characteristic of me.* Higher scores on this measure reflect greater social-evaluative anxiety (Collins et al., 2005). Collins et al. (2005) found this subscale to have excellent internal consistency (Cronbach's alpha = .97), test re-test reliability (*r* = .94), discriminant validity and convergent validity in a clinical sample. In the current study, Cronbach's alpha was .90.

Obsessive Compulsive Inventory-Revised (OCI-R; Foa et al., 2002). The OCI-R examines the distress experienced from obsessive-compulsive behaviours throughout the last month. For each item, participants rate their degree of distress on 5-point Likert scales ranging from *not at all* to *extremely.* The items from this measure form six subscale scores: checking (Items 2, 8 and 14), obsessing (Items 6, 12 and 18), ordering (Items 3, 9 and 15), washing (Items 5, 11 and 17), neutralising (Items 4, 10 and 16) and hoarding (Items 1, 7 and 13), as well as a total OCI-R score. This measure has high internal consistency in a clinical sample (Cronbach's alpha =

.81 for the total score, ranging between .86 to .90 for the subscales; Foa et al., 2002). The OCI-R has high levels of test-retest reliability, as well as high discriminant and convergent validity (Foa et al., 2002; Huppert et al., 2007; Hodgson & Rachman, 1987). In the current study, Cronbach alphas were .87 (checking), .62 (obsessing), .94 (ordering), .85 (washing), .83 (neutralising), .82 (hoarding) and .91 (total score).

Anxiety Sensitivity Index Version 3 (ASI-3; Taylor et al. 2007). The ASI-3 is an adaptation of the scales from Reiss, Peterson, Gursky, and McNally (1986) and Taylor and Cox (1998). It measures fear of the physical sensations induced by anxiety. Participants rate the extent to which they agree with items on 5-point Likert scales ranging from *Very Little* to *Very Much.* The items form three subscales: physical concerns (Items 3, 4, 5, 8, 12 and 15); cognitive concerns (Items 2, 5, 10, 14, 16 and 18) and social concerns (Items 1, 6, 9, 11, 13 and 17). The sum of all 18 items forms the ASI-3-total score. The ASI-3 subscales have been found to have high internal consistencies across non-clinical and clinical samples, with Cronbach alphas ranging between .79 and .86 for physical concerns, between .79 and .91 for cognitive concerns, and between .73 and .86 for social concerns. This measure has also shown high levels of convergent, criterion, discriminant and factorial validity (Taylor et al., 2007). In the current study, Cronbach alphas were .70 (physical concerns), .91 (cognitive concerns), .75 (social concerns) and .88 (total score).

Mini International Neuropsychiatric Interview, Version 5.0; (MINI; Sheehan et al., 1998). The MINI was described in Study I. In Study I the MINI was utilised to determine whether participants received a diagnosis of Generalised Anxiety Disorder. In the current study, specific modules of the MINI (suicidality, substance dependence, anorexia nervosa and psychosis) were administered over the telephone to screen participants for the exclusion criteria. All modules of the MINI

were then administered at each assessment point to determine whether participants had diagnoses of any psychological disorders.

Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965). This 10-item questionnaire provides a measure of global self-esteem. Participants rate their agreement with each item on 4-point Likert scales ranging from s*trongly agree* to s*trongly disagree.* Items that are positively worded require reverse coding. The scores from all items are summed and larger scores reflect higher global self-esteem. This measure has demonstrated high internal consistency in a clinical sample (Cronbach's alpha = .89; Steele & Wade, 2008), as well as high test-retest reliability and construct validity in non-clinical samples (Fleming & Courtney, 1984; Gray-Little, Williams, & Hankins, 1997). In the current study, Cronbach's alpha was .88.

Quality of Life, Enjoyment and Satisfaction Questionnaire-18 (Q-LES-Q-18; Ritsner et al., 2005). This 18-item measure is adapted from Endicott et al.'s (1993) 93-item scale and examines levels of enjoyment and satisfaction during the past week. Participants rate items on 5-point Likert scales ranging from *not at all/never* to *frequently/all the time.* Items form five subscales: subjective feelings (Items 5, 6, 7, 8 and 9), physical health (Items 1, 2, 3 and 4), leisure time activity (Items 10, 11 and 12), social relationships (Items 13, 14, 15, 16 and 17) and medication satisfaction (Item 18). A total quality of life score is calculated by dividing the sum of all items by the number of items. For participants on medication, this equates to the sum of 18 items divided by 18; for participants not on medication this equates to the sum of the first 17 items divided by 17. Ritsner et al. (2005) found this measure to have high test re-test reliability and internal consistency (Cronbach's alphas between .74 and .97), as well as high construct and concurrent validity across clinical samples. In the current study, Cronbach's alpha was .91.

Client adherence to treatment. Adherence to treatment was assessed by recording the number of group sessions attended by each participant and by administering a weekly measure of reading and homework compliance. Reading and homework compliance were assessed with items adapted from Thiels, Schmidt, Troop, Treasure, and Garth (2001) and Troop et al. (1996). This measure was utilised in the pilot trial of group CBT-CP and found to have moderate internal consistency (Steele et al., 2013). In the current study, it had a Cronbach's alpha of .73.

Adherence to restrictions of medication change and external treatment. A 10-item measure adapted from Steele et al. (2013) assessed whether participants had abstained from changing anti-depressant medication and receiving external psychotherapy throughout the treatment trial. This measure was given to participants at their post-waitlist/post-treatment assessments and at each follow-up. This measure is displayed in Appendix H.

Revision of treatment components over the follow-up period. A 6-item measure adapted from Steele and Wade (2008) and Steele et al. (2013) was given to participants at each follow-up and assessed whether participants had reviewed the readings, worksheets and homework exercises over the follow-up period. Participants were also asked whether they had practiced the CBT-CP strategies over the follow-up period and to list the strategies they had found to be the most useful. This measure is displayed in Appendix I.

3.8.4. Statistical Methods

To analyse the changes in the psychometric outcomes (H1-H5), a multi-level mixed effects linear regression model was used (Bryk & Raudenbush, 1987; Dimitrov & Rumrill, 2003; Holden et al., 2008). There were two categorical random effects

(participant, therapy group), one categorical fixed effect (group: treatment versus control), and one ordinal fixed effect (time: pre- test, post-test, 3-month follow-up, 6-month follow-up) (Bryk & Raudenbush, 1987; Dimitrov & Rumrill, 2003; Holden et al., 2008). This linear regression model was tested via SPSS's Generalised Linear Mixed Models (GLMM: SPSS, Version 22). To test the associations between the fixed effects and the psychometric outcomes, GLMM makes the assumption of a normal probability distribution for the psychometric outcomes and connects them to the fixed effects using an identity function. If any outcomes were not normally distributed, robust statistics were used to compute the parameter estimates of the covariance matrix. To analyse changes in the binary outcomes (H6 –H9), Fisher's Exact 1-sided tests were used (Bryk & Raudenbush, 1987; Dimitrov & Rumrill, 2003; Holden et al., 2008).

3.8.4.1. Assumption testing. For repeated measures design, the traditional ANOVA model makes assumptions of homogeneity of variance, normality and sphericity (Tabachnick & Fidell, 2007). The GLMM 'robust statistics' specifier accounts for violations of homogeneity of variance and normality (Holden et al., 2008). Therefore, in the present study, variables that were skewed and variables which had unequal variances across the two groups were analysed using robust statistics (Holden et al., 2008). Violations of sphericity are applicable for data that is collected across more than two waves (Tabachnick & Fidell, 2007). GLMM accounts for violations of sphericity by altering the covariance matrix from compound symmetry (the default) to autoregressive (Holden et al., 2008). Although GLMM accounts for unequally spaced points of data collection and unequal group sizes (Holden et al., 2008), the current study ensured that data collection points were equally spaced and that group sizes at baseline were equal.

For repeated measures design, the traditional ANOVA model also makes the assumption of independence of observations (Tabachnick & Fidell, 2007). This assumption was likely to be violated in the present study given that CBT-CP was delivered in a group format (Kenny, Manetti, Pierro, Livi, & Kashy, 2002). Intra-group dependencies that emerge from the clustering of outcome scores within the four therapy groups can only happen after participants have had the group treatment. As each GLMM analysis contained at least one group of participants who had received the group treatment, intra-group dependencies could have possibly compromised all of the GLMM analyses (Kenny et al., 2002; Killip, Mahfoud, & Pearce, 2004; Rabe-Hesketh & Skrondal, 2005). To ascertain the degree of the problem, the intra-class correlation (ICC) was calculated for every outcome variable across the treatment group and the treated control group immediately after their group treatment. The ICCs provided an approximation of the amount of intra-group dependency in the data and were calculated with SPSS's Linear Mixed Models procedure (Kenny et al., 2002; Killip et al., 2004; Rabe-Hesketh & Skrondal, 2005). Table 6 reports the direction, magnitude and significance of the ICCs for each outcome variable.

Table 6.

Direction, Magnitude and Significance of the Intra-Class Correlation Coefficients for each Outcome Measure

Outcome	Direction of ICC	Magnitude of ICC [a]	Significance of ICC
CM	Positive	.002	.987
PS	Negative	-	-
DA	Positive	.184	.417
CPQ	Negative	-	-
DAS-SC	Positive	.072	.623
Distress	Negative	-	-
Interference	Negative	-	-
DASS-dep	Negative	-	-
DASS-anx	Negative	-	-
DASS-stress	Negative	-	-
EDEQ-sc	Negative	-	-
EDEQ-wc	Negative	-	-
EDEQ-ec	Negative	-	-
EDEQ-res	Negative	-	-
EDEQ-total	Negative	-	-
BDI-II	Negative	-	-
PSWQ	Negative	-	-
FNE-B	Negative	-	-
ASI-3	Negative	-	-
OCI-R	Negative	-	-
RSES	Positive	.051	.697
Q-LES-Q	Negative	-	-

Note. ICC = Intra-class correlation; CM = Concern over Mistakes subscale of the FMPS; PS=Personal Standards subscale of the FMPS; DA = Doubts about Actions subscale of the FMPS; CPQ = Clinical Perfectionism Questionnaire; DAS-SC = Dysfunctional Attitudes Scale-Self-Criticism; Distress = Distress of perfectionism; Interference = Interference from perfectionism; DASS-dep = Depression subscale of Depression, Anxiety and Stress Scale-21 (DASS-21); DASS-anx = Anxiety subscale of DASS-21; DASS-stress = Stress subscale of DASS-21; EDEQ-sc = Shape Concerns subscale of the EDEQ; EDEQ-wc = Weight Concerns subscale of the EDEQ; EDEQ-EC = Eating Concern subscale of the EDEQ; EDEQ-res = Restraint subscale of the EDEQ; EDEQ-total = EDEQ total score; BDI-II = Beck Depression Inventory-II; PSWQ = Penn State Worry Questionnaire; FNE-B= Brief Fear of Negative Evaluation Scale; ASI-3 = Anxiety Sensitivity Index-3; OCI-R = Obsessive-Compulsive Inventory-Revised; RSES= Rosenberg Self-Esteem Scale; Q-LES-Q-18 = Quality of Life Enjoyment and Satisfaction Questionnaire-18. [a] SPSS's Linear Mixed Models procedure is unable to converge on a solution when ICCs are negative (Tabachnick & Fidell, 2007)

The intra-class correlation coefficients for CM, DA, DAS-SC and RSES scores were positive. This suggested that scores on these variables were more similar for individuals attending the same therapy group as compared to individuals participating in different therapy groups. Positive intra-class correlation coefficients are expected following group treatment given the interaction of participants within a particular therapy group (Kenny et al., 2002; Killip et al., 2004). The intra-class correlation coefficients for the remaining outcomes were negative. This denoted a rare form of intragroup dependency where scores on the variables were less similar for individuals attending the same therapy group as compared to individuals participating in different therapy groups (Kenny et al., 2002).

Kenny et al. (2002) argued that intragroup dependencies can lead to inflations in the Type I or Type II error rate. Murray and Hannan (1990) stated that one should be concerned if positive intra-class correlation coefficients have values greater than .02 regardless of their statistical significance. Kenny, Kashy, and Bolger (1998) argued that because intra-class correlations can distort *p*-values even when they are not statistically significant, the best strategy when analysing data from groups that contain four or more participants is to make the assumption that intragroup dependency does exist in the data without the need to consider its significance. Consequently, in the present GLMM analyses, both positive and negative intra-group dependencies were controlled by specifying the multilevel nature of the data (participant nested within therapy group) in the GLMM syntax (Holden et al., 2008).

3.8.4.2. Statistically significant change. The first GLMMs to be tested investigated whether there was a significant Group x Time interaction between the pre-test and the post-test for each outcome variable. The GLMMs comprised two nominal random effects (participant and therapy group), one categorical fixed effect

(group: treatment versus waitlist control), one ordinal fixed effect (time: pre-test versus post-test), and one fixed interaction term (Group x Time). By specifying a GLMM in which participants were nested within therapy groups, intra-group dependencies were able to be controlled (Bryk & Raudenbush, 1987; Dimitrov & Rumrill, 2003; Holden et al., 2008; Kenny et al., 2002; Killip et al., 2004).

A separate GLMM analysis was run for each outcome measure to maximise the likelihood of convergence (Holden et al., 2008). As analysing each outcome independently of other outcomes inflates the family-wise error rate, the per-test alpha had to be corrected so that the inflation was controlled. In the current study, the alpha correction was applied within groups of conceptually related outcomes so that statistical power was conserved (Tabachnick & Fidell, 2007). The perfectionism category contained seven outcome measures (.05/7, α =.007), the eating disorder category consisted of five outcome measures (.05/5, α =.010), and the depression category contained two outcome measures (.05/2, α =.025). The remaining categories (general anxiety, stress, social anxiety, pathological worry, anxiety sensitivity, obsessive-compulsive symptoms, self-esteem and quality of life), each consisted of one outcome measure, therefore the standard alpha level was applied to the outcome measure in each of these categories (.05/1, α =.05).

Effect sizes for the GLMM analyses were estimated by partial eta-squared (partial η^2). An effect size of .01 is considered to be 'small', .06 'moderate' and .15 'large' (Richardson, 2011). For each outcome that yielded a significant Group x Time interaction, the nature of this interaction was explored by conducting pre-post least significant difference (LSD) comparisons within each of the two groups (Keppel & Wickens, 2004). Effect sizes for the LSD comparisons were estimated

with Cohen's *d*. An effect size of 0.2 signifies a 'small' effect, 0.5 a 'moderate' effect and '0.8' a large effect (Cohen, 1988).

To examine whether individuals originally from the waitlist control condition showed changes on the outcome variables comparable to the treatment group after they received group CBT-CP, a GLMM analysis was conducted where the group fixed effect contrasted the treatment and treated control groups, and the time fixed effect had four levels: pre-treatment, post-treatment, 3-month follow-up and 6-month follow-up. If the Group x Time interaction effects for the outcome variables were small and non-significant this would suggest comparable trends across time for the treatment and the treated control groups (Bryk & Raudenbush, 1987; Dimitrov & Rumrill, 2003; Holden et al., 2008).

To examine whether post-treatment gains were maintained at the 3-month and 6-month follow-ups, a GLMM that included a single fixed effect, time (pre-treatment, post-treatment, 3-month follow-up, 6-month follow-up) was tested (Bryk & Raudenbush, 1987; Dimitrov & Rumrill, 2003; Holden et al., 2008). For outcome variables where there was a significant main effect of time, post-hoc LSD contrasts were conducted between pre-treatment and post-treatment, pre-treatment and 3-month follow-up, and pre-treatment and 6-month follow-up (Keppel & Wickens, 2004). If each of these post-hoc analyses were significant for a particular outcome variable, this would suggest that the post-treatment gains had been maintained at the 3-month and 6-month follow-ups (Keppel & Wickens, 2004).

3.8.4.3. Reliable and clinically significant change. For outcome variables that demonstrated a significant Group x Time interaction between pre- and post-treatment, reliable and clinically significant change analysis was conducted (Jacobson & Truax, 1991). Reliable change analysis determines whether the change

in an outcome variable is reflective of a genuine behavioural change, rather than the variation of an unreliable measurement tool (Jacobson & Truax, 1991). Reliable change indices (RCIs) were calculated for each person on each outcome measure. The formula for the RCI is $(X_{\text{pretest}} - X_{\text{posttest}})/ \sqrt{2}\ (SE)^2$, where X_{pretest} is the individual's pre-test score on the outcome, X_{posttest} is the individual's post-test score on the outcome and *SE* is the standard error of measurement. *SE* is calculated as $S_1\sqrt{(1 - \text{rel})}$, where S_1 is estimated by the outcome measure's variability at pre-intervention (T1) and rel is the reliability of the outcome measure. An RCI equal to or greater than an absolute value of 1.96 on a particular outcome indicates a reliable change on that outcome (Jacobson & Truax, 1991). Fisher's 1-sided tests were used to investigate whether the treatment group had a significantly greater proportion of participants experiencing reliable change on an outcome relative to the waitlist control group. Fisher's 1-sided tests were also used to compare the treatment group to the *treated* control group in regard to the proportion of participants experiencing reliable change on an outcome. After the entire sample had received group CBT-CP, the total proportion of individuals experiencing reliable change on the outcome measures at post-treatment and 6-month follow-up were calculated.

Clinically significant change analysis determines whether an individual has made a significant shift away from the dysfunctional population in the direction of the functional population. To examine whether clinically significant change in perfectionism occurred, a cut-off point for clinical significance was first calculated (Jacobson & Truax, 1991). Jacobson and Truax (1991) proposed that this clinical cut-off point can be defined in three different ways; however, only the first of these definitions can be used in the absence of population norms. As there are no established dysfunctional or functional population norms for the perfectionism

outcome variables, the first definition was utilised. According to this definition, the cut-off point for clinical significance is the score that is two standard deviations away from the mean of the dysfunctional population (Jacobson & Truax, 1991). Consistent with Riley et al.'s (2007) approach of calculating the clinical significance of CBT-CP, the standard deviation and mean used in this definition were derived from the pre-treatment scores of the current sample. As clinically significant change in CPQ and CM were calculated, the pre-treatment CPQ and CM scores of the current sample were used to calculate the respective clinical cut-offs for these measures. Providing that an individual first experienced reliable change on CPQ (or CM) between pre- and post-treatment, if their post-treatment CPQ (or CM) score crossed the corresponding clinical cut-off in the functional direction, the individual has experienced clinically significant change (Jacobson & Truax, 1991).

Hageman and Arrindell (1999) specified categories for clients based on whether they experienced reliable and/or clinically significant change. If an individual has experienced reliable change and their post-treatment score has exceeded the clinical cut-off in the functional direction, the client is deemed to be "recovered" (Hageman & Arrindell, 1999, p. 1170). If a client has experienced reliable change and has not crossed this cut-off point, they have not experienced clinically significant change but instead are deemed to be "improved but not recovered" (Hageman & Arrindell, 1999, p. 1170). If a client has not experienced reliable change, they are deemed to be "unchanged" (Hageman & Arrindell, 1999, p. 1170). If a client has experienced reliable change in the direction that suggests a genuine worsening, they are deemed to be "deteriorated" (Hageman & Arrindell, 1999, p. 1170). Fisher's 1-sided tests were utilised to examine whether the intervention group had a significantly greater proportion of recovered individuals

relative to the waitlist control group. After the entire sample had received group CBT-CP, the total number of individuals deemed recovered, improved, unchanged and deteriorated in perfectionism (CPQ and CM) between pre-treatment and post-treatment and pre-treatment and 6-month follow-up were calculated.

To examine whether clients demonstrated clinically significant change in their psychological disorders between pre-treatment and post-treatment, recovery from disorders was examined for each participant (Tabachnick & Fidell, 2007). A participant recovered from a psychological disorder if they had a DSM-IV-TR (APA, 2000) diagnosis of the disorder at pre-treatment and did not have that diagnosis at post-treatment. They were not recovered if they had a diagnosis of the disorder at pre-treatment and at post-treatment (Tabachnick & Fidell, 2007). Fisher's 1-sided tests were utilised to determine whether a significantly larger proportion of participants from the group CBT-CP condition demonstrated pre-post recovery from a psychological disorder compared to the waitlist control condition (Tabachnick & Fidell, 2007). Once all participants had received group CBT-CP, the total number of participants demonstrating recovery between pre-treatment and post-treatment and between pre-treatment and 6-month follow-up were calculated for each psychological disorder.

3.9. Results

3.9.1. Participant flow

During the recruitment phase of this study, 155 individuals expressed interest. Five participants (3%) were excluded immediately (2 did not return telephone call and 3 were younger than 18 years). The screening questionnaire was sent to 150 individuals of which 83 (55%) were excluded. Seven of these 83 individuals (8%) did not meet the criteria for inclusion (4 had CM scores below 24.7,

1 had psychosis, 1 was not fluent in English and 1 was inappropriate for a group due to being very critical of others). Seventy-six of the 83 individuals declined (33 unable to make session time/too busy, 23 did not return measure, 7 wanted to have external psychotherapy, 6 declined without providing a reason, 5 did not think they were appropriate for the treatment and 1 was changing medication).

The remaining 67 individuals were offered a telephone screening appointment. One of these individuals could not be contacted. Sixty-six telephone interviews were conducted, which resulted in 23 individuals being excluded (12 were of moderate to high suicide risk and/or were engaging in self-harm, 2 wanted to have external psychotherapy, 2 had a body mass index ≤ 17.5 and disordered eating, 1 had a mood disorder with psychotic features and 6 dropped out prior to assessment). Baseline assessments were conducted with 43 individuals. One individual withdrew to continue external psychotherapy. Forty-two eligible participants were randomised to the intervention and control conditions. Figure 3 displays the CONSORT diagram describing the flow of eligible participants through the study (Moher et al., 2010).

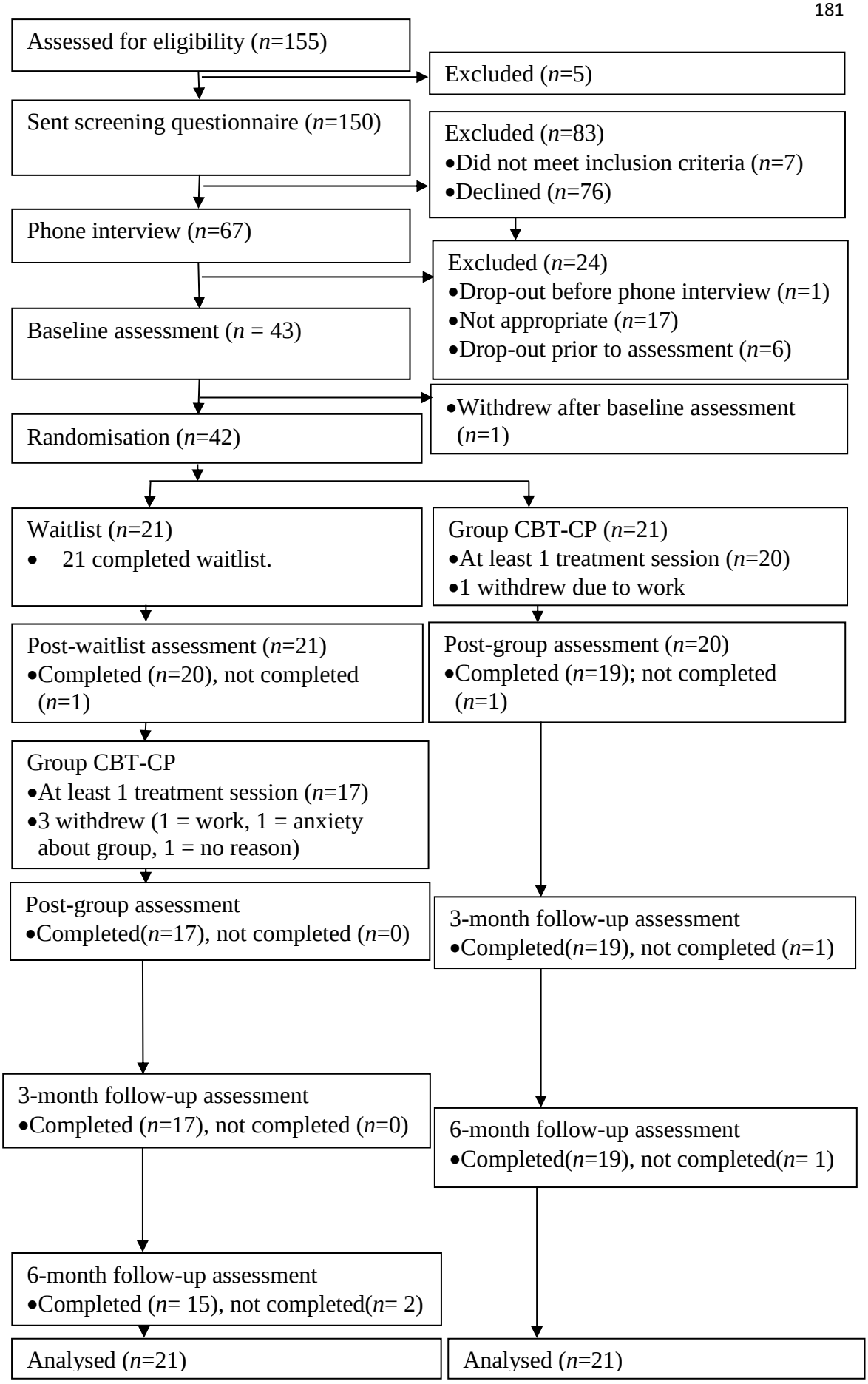

Figure 3. CONSORT diagram of RCT showing the flow of eligible participants through the study (Moher et al., 2010).

3.9.2. Sample Characteristics

Table 7 displays the baseline demographic and clinical characteristics for participants in the intervention and control conditions. Fisher's exact tests (2-sided) indicated that participants in these conditions did not significantly differ in terms of gender, race, first language, occupation, or anti-depressant medication status. There were no significant differences between conditions in the number of individuals with a current psychological disorder or in the number of individuals with depression in remission. Independent samples *t*-tests indicated that participants in the intervention and control conditions did not differ significantly in age or in their number of psychological disorders.

Table 8 displays the mean baseline scores on the outcome measures for participants in the intervention and control conditions. Independent samples *t*-tests revealed that participants in these conditions did not significantly differ on any outcome variable. Table 9 displays the principal and secondary diagnoses of participants in the intervention and control conditions. Fisher's exact tests (2-sided) indicated that there were no significant differences in the total number of participants in each condition who had major depressive disorder ($p = 1.00$), bipolar I or II disorder ($p = 1.00$), obsessive-compulsive disorder ($p = 1.00$), social phobia ($p = .719$), panic disorder ($p = .488$), eating disorder not otherwise specified ($p = 1.00$), bulimia nervosa ($p = .488$), or alcohol dependence ($p = 1.00$). There was however, a significantly greater number of individuals with generalised anxiety disorder in the intervention condition compared to the control condition ($p = .021$); but this was likely to work against the hypotheses.

Table 7.

Baseline Demographic Characteristics (n, %) for Participants in the Intervention and Control Conditions.

	Intervention (*n* = 21)	Control (*n* = 21)	Fisher's exact test (2-sided)	Entire sample (*n* = 42)
Age (years) (std error)	28.86 (1.80)	33.00 (2.68)	*t*(40) = -1.28, *p* = .208 [a]	30.93 (1.63)
Gender (female)	17 (81%)	17 (81%)	*p* = 1.00	34 (81%)
Race	19 Caucasian (90%)	17 Caucasian (81%)	*p* = .663	36 (86%)
	2 Asian (10%)	3 Asian (14%)	*p* = 1.00	5 (12%)
	0 African (0%)	1 African (5%)	*p* = 1.00	1 (2%)
English first language	17 (81%)	19 (90%)	*p* = .663	36 (86%)
Occupation	11 students (52%)	11 students (52%),	*p* = 1.00	22 students (52%)
	10 employed (48%)	10 employed (48%)	*p* = 1.00	20 employed (48%)
Medication (yes)	8 (38%)	6 (29%)	*p* = .744	14 (33%)
Psychological disorder	21 with disorder (100%)	17 with disorder (81%)	*p* = .107	38 with disorder (90%)[b]
Depression in remission (yes)	10 (48%)	11 (52%)	*p* = 1.00	21 (50%)
Number of disorders (mean, std error)	2.096 (0.23)	1.95 (1.47)	t(40) = 3.64, *p* = .718 [a]	2.02 (1.26)

Note. [a] t-tests rather than fisher's exact-sided tests were used to test for group differences in scale outcome variables.

[b] The 4 participants who did not have a current diagnosis all had depression in remission. *$p < .05$

Table 8.

Means and (Standard Errors) of Baseline Outcome Variables for the Intervention Condition, Control Condition and Entire Sample.

Measure	Intervention (n = 21)	Control (n = 21)	t(df)	p	Entire sample (n = 42)
CM	33.14 (1.32)	33.14 (1.35)	$t(40) = 0.00$,	p =1.000	33.14 (0.93)
PS	28.86 (1.04)	28.57 (0.78)	$t(40) = 0.22$,	p = .827	28.71 (0.64)
DA	15.61 (0.64)	15.66 (0.61)	$t(40) =-0.05$,	p = .957	15.64 (0.44)
CPQ	32.10 (1.17)	31.24 (1.26)	$t(40) = 0.50$,	p = .620	31.67 (0.85)
DAS-SC	68.43 (2.74)	71.29 (4.05)	$t(40) =-0.59$,	p = .562	69.86 (2.42)
Distress	6.62 (0.36)	6.10 (0.41)	$t(40) = 0.95$,	p = .346	6.36 (0.27)
Interference	6.90 (0.35)	6.19 (0.43)	$t(40) = 1.28$,	p = .208	6.55 (0.28)
EDEQ-sc	2.20 (0.30)	2.70 (0.39)	$t(40) =-1.01$,	p = .321	2.45 (0.25)
EDEQ-wc	2.02 (0.36)	2.62 (0.40)	$t(40) =-1.12$,	p = .271	2.32 (0.27)
EDEQ-ec	0.94 (0.26)	1.19 (0.33)	$t(40) =-0.59$,	p = .559	1.07 (0.21)
EDEQ-res	1.08 (0.31)	0.94 (0.26)	$t(40) =-1.74$,	p = .090	1.50 (0.25)
EDEQ-total	1.56 (0.27)	2.11 (0.34)	$t(40) =-1.24$,	p = .222	1.83 (0.22)
BDI-II	17.45 (2.61)	18.59 (2.67)	$t(36) =-0.18$,	p = .856	18.39 (1.84)
DASS-dep	15.43 (2.31)	13.52 (2.02)	$t(40) = 0.62$,	p = .539	14.48 (1.52)
DASS-anx	12.10 (2.38)	11.62 (2.16)	$t(40) = 0.15$,	p = .883	11.86 (1.59)
DASS-stress	23.33 (1.70)	24.10 (2.26)	$t(40) = -0.27$,	p = .789	23.71 (1.40)
FNE-B[a]	49.93 (2.22)	50.79 (1.99)	$t(26) = -0.29$,	p = .776	50.36 (1.47)
ASI-3[b]	25.62 (3.15)	27.33 (3.95)	$t(26) = -0.33$,	p = .742	26.54 (2.53)
OCI-R[c]	24.60 (4.61)	24.24 (4.45)	$t(21) = 0.06$,	p = .955	24.39 (3.14)
PSWQ	65.10 (1.65)	66.90 (2.51)	$t(40) = -0.60$,	p = .551	66.00 (1.49)
RSES	25.05 (0.75)	25.81(1.30)	$t(40) = -0.51$,	p = .614	25.43 (0.74)

Q-LES-Q	3.20 (0.16)	3.36 (0.17)	$t(40) = -0.60$, $p = .555$	3.28 (0.11)

Note. CM = Concern over Mistakes subscale of the Frost Multidimensional Perfectionism Scale (FMPS); PS = Personal Standards subscale of the FMPS; DA = Doubts about Actions subscale of the FMPS; CPQ = Clinical Perfectionism Questionnaire; DAS-SC = Dysfunctional Attitudes Scale-Self-Criticism; Distress = Distress of perfectionism; Interference = Interference from perfectionism; EDEQ-sc = Shape Concerns subscale of the Eating Disorder Examination Questionnaire (EDEQ); EDEQ-wc = Weight Concerns subscale of the EDEQ; EDEQ-EC = Eating Concern subscale of the EDEQ; EDEQ-res = Restraint subscale of the EDEQ; EDEQ-total= EDEQ total score; BDI-II = Beck Depression Inventory-II; DASS-dep = Depression subscale of the Depression, Anxiety and Stress Scale-21 (DASS-21); DASS-anx = Anxiety subscale of the DASS-21; DASS-stress = Stress subscale of the DASS-21; FNE-B = Brief Fear of Negative Evaluation Scale; ASI-3 = Anxiety Sensitivity Index-3; OCI-R = Obsessive-Compulsive Inventory-Revised; PSWQ = Penn State Worry Questionnaire; RSES= Rosenberg Self-Esteem Scale; Q-LES-Q-18 = Quality of Life Enjoyment and Satisfaction Questionnaire-18.

[a] FNE-B = intervention condition $n = 14$; control condition $n = 14$; total $n = 28$

[b] ASI-3 = intervention condition $n = 13$; control condition $n = 15$; total $n = 28$

[c] OCI-R = intervention condition $n = 10$; control condition $n = 13$; total $n = 23$

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 9.

Baseline Psychological Disorders of Participants Randomised to the Intervention and Control Conditions.

	Intervention Condition (*n* = 21)			Control Condition (*n* = 21)		
Psychological disorder	Principal diagnosis	Secondary diagnosis	Total	Principal diagnosis	Secondary diagnosis	Total
Major Depressive Disorder	1 (5%)	6 (29%)	7 (33%)	3 (14%)	5 (24%)	8 (38%)
Bipolar I or II Disorder	0 (0%)	1 (5%)	1 (5%)	0 (0%)	0 (0%)	0 (0%)
Generalised Anxiety Disorder	19 (90%)	2 (10%)	21 (100%)[a]	11 (52%)	4 (19%)	15 (72%)[b]
Obsessive Compulsive Disorder	0 (0%)	4 (19%)	4 (19%)	0 (0%)	3 (14%)	3 (14%)
Social Phobia	0 (0%)	4 (19%)	4 (19%)	0 (0%)	6 (29%)	6 (29%)
Panic Disorder with/without Agoraphobia	0 (0%)	2 (10%)	2 (10%)	0 (0%)	0 (0%)	0 (0%)
Bulimia Nervosa	0 (0%)	0 (0%)	0 (0%)	1 (5%)	1 (5%)	2 (10%)
EDNOS	1 (5%)	4 (19%)	5 (24%)	2 (10%)	2 (10%)	4 (19%)
Alcohol Dependence	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (5%)	1 (5%)

Note. Change in subscript denotes a significant difference between groups.

3.9.3. Compliance with Treatment

3.9.3.1. Attrition. Five participants withdrew prior to receiving the active intervention (intervention condition: $n = 1$; control condition: $n = 4$). An additional three participants withdrew between post-treatment and 6-month follow-up (intervention condition: $n = 1$; treated control condition: $n = 2$). Thus, eight out of 42 participants (19.04%) did not complete the treatment trial.

3.9.3.2. Session attendance. The treatment and treated control groups did not differ significantly in the number of group therapy sessions attended (intervention condition: $M = 5.85$, $SD = 1.93$; treated control condition: $M = 5.39$, $SD = 2.30$; $p = .51$).

3.9.3.3. Reading and homework compliance. On average, the treatment group read 49.14% ($SD = 28.80$) of the readings each week, whereas the treated control group read 66.27% ($SD = 21.61$) of the readings each week. The difference between these percentages was not statistically significant (t [35] = 2.02, $p = .052$). The entire sample read an average of 57.01% ($SD = 26.84$) of the readings each week. In regard to homework compliance, on average, the treatment group completed 40.51 % ($SD = 24.13$) of the homework exercises each week, whereas the treated control group completed 39.43 % ($SD = 19.83$) of the homework exercises each week. The difference between these two percentages was not statistically significant (t [35] = 0.15, $p = .884$). The entire sample completed an average of 40.01% ($SD = 21.96$) of the homework exercises each week.

3.9.4. The Effects of Group CBT-CP on Dimensions of Perfectionism

As displayed in Table 10, there were significant Group x Time interaction effects for all measures of perfectionism (CPQ, CM, PS, DA, DAS-SC, distress and interference) at the Bonferroni-adjusted alpha level of .007. Partial eta-squared

values indicated that the size of the interaction effects for CM, DAS-SC, distress and interference were large, whereas the size of the interaction effects for CPQ scores, PS and DA were moderate. Post-hoc LSD contrasts indicated that the group receiving group CBT-CP displayed significant pre-post decreases in all measures of perfectionism. Cohen's *d* values indicated that the size of all pre-post decreases were large except the decrease in PS, which was moderate. The waitlist control group did not display significant pre-post changes on any measure of perfectionism.

3.9.5. The Effect of Group CBT-CP on Depression, Eating Disorder Symptoms, Anxiety Symptoms and Self-Esteem

There was a large significant Group x Time interaction for the BDI-II at a Bonferroni-adjusted alpha level of .025. At a Bonferroni-adjusted alpha level of .010 there were large significant Group x Time interactions for eating pathology as assessed EDEQ-shape concerns and EDEQ-weight concerns. There was also a moderate significant Group x Time interaction for eating pathology as measured by EDEQ-total. At a standard alpha level of .05, there were moderate significant Group x Time interactions for social anxiety (FNE-B) and anxiety sensitivity (ASI-3); and a large significant Group x Time interaction for self-esteem (RSES). The Group x Time interactions for the other psychopathology variables were not significant at the Bonferroni-adjusted alpha levels.

Post-hoc LSD contrasts indicated that the group receiving group CBT-CP exhibited moderate significant pre-post decreases in BDI-II and small significant pre-post decreases in total eating disorder pathology, shape concerns and weight concerns. This group also exhibited a large significant pre-post decrease in social anxiety, a small significant pre-post decrease in anxiety sensitivity and a large significant pre-post increase in self-esteem. The waitlist control group exhibited a

small significant pre-post decrease in BDI-II and small significant pre-post increases in shape concerns and weight concerns. The waitlist control group did not exhibit significant pre-post changes in total eating disorder pathology, social anxiety, anxiety sensitivity or self-esteem.

3.9.6. The Effect of Group CBT-CP on Quality of Life

At a standard alpha level of .05, there was a moderate significant Group x Time interaction for quality of life. Post-hoc LSD contrasts indicated that the treatment group reported a small significant pre-post increase in quality of life. The waitlist control group did not report a significant pre-post change in quality of life.

Table 10.

Adjusted Means and (Standard Errors) of Outcome Variables at Baseline and Post-treatment/Post-waitlist for the Intervention and Control Conditions.

Measure	Group Effect	Time Effect	Group*Time Effect	Partial eta^2	Intervention Condition			Control Condition		
					Baseline *M* (*SE*)	Post-treatment *M* (*SE*)	Cohen's *d*	Baseline *M* (*SE*)	Post-waitlist *M* (*SE*)	Cohen's *d*
CM	$F(1,77) = 5.04$ $p = .028$*	$F(1,77) = 16.42$ $p < .001$***	$F(1,77) = 19.03$ $p < .001$***	0.20	33.14 [a] (1.36)	25.66 [b] (1.40)	1.23	33.14 [a] (1.36)	33.42 [a] (1.38)	0.04
PS	$F(1,77) = 0.90$ $p = .347$	$F(1,77) = 13.49$ $p < .001$***	$F(1,77) = 10.04$ $p = .002$**	0.12	28.86 [a] (0.95)	25.64 [b] (0.97)	0.69	28.57 [a] (0.95)	28.34 [a] (0.96)	0.06
DA	$F(1,77) = 2.80$ $p = .098$	$F(1,77) = 5.54$ $p = .021$*	$F(1,77) = 8.42$ $p = .005$**	0.10	15.62 [a] (0.61)	13.38 [b] (0.64)	0.81	15.67 [a] (0.61)	15.90 [a] (0.62)	0.08
CPQ	$F(1,77) = 0.81$ $p = .372$	$F(1,77) = 28.83$ $p < .001$***	$F(1,77) = 9.33$ $p = .003$**	0.11	32.10 [a] (1.16)	26.04 [b] (1.19)	1.20	31.24 [a] (1.16)	29.57 [a] (1.17)	0.31
DAS-SC	$F(1,77) = 6.10$ $p = .016$	$F(1,77) = 22.73$ $p < .001$***	$F(1,77) = 18.40$ $p < .001$***	0.19	68.43 [a] (3.55)	50.18 [b] (3.65)	1.48	71.29 [a] (3.55)	70.32 [a] (3.60)	0.05
Distress	$F(1,77) = 1.03$ $p = .314$	$F(1,77) = 8.78$ $p = .004$**	$F(1,77) = 23.89$ $p < .001$***	0.24	6.62 [a] (0.37)	4.98 [b] (0.38)	0.95	6.10 [a] (0.37)	6.50 [a] (0.38)	0.24

Int	$F(1,77) = 0.59$ $p = .445$	$F(1,77) = 30.19$ $p < .001$***	$F(1,77) = 30.31$ $p < .001$***	0.28	6.91 [a] (0.40)	4.65 [b] (0.41)	1.27	6.19 [a] (0.40)	6.19 [a] (0.41)	0.00
EDEQ-SC	$F(1,77) = 36.69$ $p < .001$***	$F(1,77) = 0.56$ $p = .458$	$F(1,77) = 31.59$ $p < .001$***	0.29	2.20 [a] (0.12)	1.73 [b] (0.15)	0.35	2.70 [a] (0.00)	3.06 [b] (0.14)	0.19
EDEQ-WC	$F(1,77) = 7.98$ $p = .006$**	$F(1,77) = 12.26$ $p = .001$**	$F(1,77) = 45.47$ $p < .001$***	0.37	2.02 [a] (0.10)	1.61 [b] (0.04)	0.29	2.62 [a] (0.27)	2.75 [b] (0.32)	0.07
EDEQ-EC	$F(1,77) = 1.59$ $p = .211$	$F(1,77) = 0.45$ $p = .506$	$F(1,77) = 0.74$ $p = .392$	0.01	0.94 [a] (0.19)	0.81[a] (0.09)	0.12	1.19 [a] (0.14)	1.21 [a] (0.29)	0.01
EDEQ-res	$F(1,77) = 8.75$ $p = .004$**	$F(1,77) = 6.67$ $p = .012$*	$F(1,77) = 2.18$ $p = .143$	0.03	1.08 [a] (0.14)	0.76 [b] (0.02)	0.26	1.92 [a] (0.26)	1.83 [a] (0.37)	0.05
EDEQ-total	$F(1,77) = 9.38$ $p = .003$**	$F(1,77) = 3.42$ $p = .068$	$F(1,77) = 11.66$ $p = .001$**	0.13	1.56 [a] (0.14)	1.23 [b] (0.08)	0.30	2.11 [a] (0.17)	2.21 [a] (0.28)	0.06
BDI-II	$F(1,73) = 5.73$ $p = .019$*	$F(1,73) = 157.48$ $p < .001$***	$F(1,73) = 38.00$ $p < .001$***	0.34	17.45 [a] (1.14)	10.40 [b] (0.82)	0.74	18.59 [a] (1.40)	16.19 [b] (0.72)	0.22
DASS-dep	$F(1,77) = 0.10$ $p = .753$	$F(1,77) = 8.91$ $p = .004$**	$F(1,77) = 1.04$ $p = .310$	0.01	15.43 [a] (1.64)	9.98 [b] (0.09)	0.61	13.52 [a] (2.51)	10.85 [a] (0.41)	0.30
DASS-anxiety	$F(1,77) = 0.30$ $p = .585$	$F(1,77) = 12.58$ $p = .001$**	$F(1,77) = 1.94$ $p = .168$	0.03	12.10 [a] (1.01)	7.33 [b] (1.51)	0.56	11.62 [a] (1.90)	9.54 [a] (0.03)	0.25
DASS-stress	$F(1,77) = 1.66$ $p = .202$	$F(1,77) = 13.42$ $p < .001$***	$F(1,77) = 2.74$ $p = .102$	0.03	23.33 [a] (1.98)	15.67 [b] (2.06)	0.95	24.10 [a] (1.98)	21.20 [b] (2.02)	0.29

FNEB	$F(1,52) = 0.90$ $p = .347$	$F(1,52) = 17.13$ $p < .001$***	$F(1,52) = 7.12$ $p = .010$*	.12	50.41 [a] (4.04)	40.18 [b] (4.03)	1.38	51.65 [a] (4.07)	49.44 [a] (4.07)	0.25
ASI-3	$F(1,53) = 0.00$ $p = .992$	$F(1,53) = 14.35$ $p < .001$***	$F(1,53) = 5.03$ $p = .029$*	.09	27.49 [a] (4.72)	22.37 [b] (5.75)	0.43	25.64 [a] (1.78)	24.32 [a] (0.42)	0.09
OCI-R	$F(1,45) = 1.25$ $p = .270$	$F(1,45) = 42.39$ $p < .001$***	$F(1,45) = 1.28$ $p = .264$	.03	22.84[a] (0.78)	16.86 [b] (1.65)	0.50	23.48 [a] (1.26)	19.27[b] (0.04)	0.30
PSWQ	$F(1,77) = 2.63$ $p = .109$	$F(1,77) = 16.36$ $p < .001$***	$F(1,77) = 2.35$ $p = .129$	.03	65.10 [a] (2.69)	59.95 [b] (1.24)	0.57	66.91 [a] (0.88)	64.59 [b] (0.25)	0.21
RSES	$F(1,77) = 3.10$ $p = .082$	$F(1,77) = 12.32$ $p = .001$**	$F(1,77) = 13.46$ $p < .001$***	.15	25.05 [a] (0.44)	28.44 [b] (0.36)	1.03	25.81 [a] (0.80)	25.73 [a] (0.30)	0.01
QLESQ	$F(1,77) = 0.03$ $p = .868$	$F(1,77) = 1.19$ $p = .279$	$F(1,77) = 5.70$ $p = .019$*	.07	3.20 [a] (0.16)	3.48 [b] (0.16)	0.43	3.36 [a] (0.16)	3.25 [a] (0.16)	0.13

Note. Change in subscript denotes a significant change between baseline and post-treatment/post-waitlist. Partial η^2 = partial eta squared; CM = Concern over Mistakes subscale of the Frost Multidimensional Perfectionism Scale (FMPS); PS = Personal Standards subscale of the FMPS; DA = Doubts about Actions subscale of the FMPS; CPQ = Clinical Perfectionism Questionnaire; DAS-SC = Dysfunctional Attitudes Scale-Self-Criticism; Distress = Rating of Distress of perfectionism; Interference: Rating of interference from perfectionism; EDEQ-sc = Shape Concerns subscale of the Eating Disorder Examination Questionnaire (EDEQ); EDEQ-wc = Weight Concerns subscale of the EDEQ; EDEQ-EC = Eating Concern subscale of the EDEQ; EDEQ-res = Restraint subscale of the EDEQ; EDEQ-total = EDEQ total score; BDI-II = Beck Depression Inventory-II; DASS-dep = Depression subscale of the Depression, Anxiety and Stress Scale-21 (DASS-21); DASS-anx = Anxiety subscale of the DASS-21; DASS-stress = Stress subscale of the DASS-21; FNE-B= Brief Fear of Negative Evaluation Scale; ASI-3 = Anxiety Sensitivity Index-3; OCI-R = Obsessive-Compulsive Inventory-Revised; PSWQ = Penn State Worry Questionnaire; RSES= Rosenberg Self-Esteem Scale; Q-LES-Q-18 = Quality of Life Enjoyment and Satisfaction Questionnaire-18.
* $p < .05$. ** $p < .01$. *** $p < .001$.

3.9.7. Comparison of the Treatment and Treated Control Groups

After the waitlist control group received group CBT-CP their pattern of change was compared to that of the treatment group. As reported in Table 11, comparisons between the treated control group and treatment group across the four assessments (pre-treatment, post-treatment, 3-month follow-up and 6-month follow-up) revealed a non-significant Group x Time interaction for each outcome measure. This suggested that the treated control group and treatment group showed comparable time-related changes on all outcomes, which was consistent with the groups demonstrating comparable responses to the group CBT-CP treatment.

3.9.8. Maintenance of Changes at 3-Month and 6-Month Follow-ups

As the treated control and treatment groups demonstrated a comparable pattern of change over time on all outcomes, the sample was analysed as a whole to increase statistical power (Tabachnick & Fidell, 2007). As seen in Table 11, there were significant main effects of time across the four assessments (pre-treatment, post-treatment, 3-month follow-up and 6-month follow-up) for all perfectionism outcomes, depression (BDI-II), total eating disorder pathology, shape concerns, weight concerns, social anxiety, anxiety sensitivity, self-esteem and quality of life. As seen in Table 12, post-hoc LSD contrasts indicated significant pre-post decreases for all perfectionism outcomes, depression (BDI-II), total eating disorder pathology, shape concerns, weight concerns, social anxiety and anxiety sensitivity; as well as significant pre-post increases for self-esteem and quality of life. Post-hoc LSD contrasts also indicated that the changes in each outcome variable remained significant between pre-treatment and 3-month follow-up, as well as between pre-treatment and 6-month follow-up. This was consistent with all changes being maintained at 3-month and 6-month follow-ups.

Table 11.

Table of Effects and Adjusted Means (Standard Errors) for the Entire Sample at Pre-treatment, Post-treatment, 3-month Follow-up and 6-month Follow-up.

Measure	Group effect	Time effect	Group x Time effect	Partial Eta^2	Pre-tx	Post-tx	3-month follow-up	6-month follow-up
CM	$F(1,139) = 0.07$ $p = .798$	$F(3,139) = 25.27$ $p < .001$***	$F(3,139) = 0.27$ $p = .844$	.01	33.51 (1.23)	26.42 (1.27)	26.47 (1.27)	25.54 (1.29)
PS	$F(1,139) = 0.02$ $p = .901$	$F(3,139) = 14.22$ $p < .001$***	$F(3,139) = 0.33$ $p = .807$	.01	28.70 (0.71)	25.71 (0.74)	25.51 (0.70)	25.67 (0.75)
DA	$F(1,139) = 0.04$ $p = .835$	$F(3,139) = 17.80$ $p < .001$***	$F(3,139) = 0.68$ $p = .566$	.01	15.82 (0.51)	13.75 (0.53)	12.90 (0.54)	12.57 (0.55)
CPQ	$F(1,139) = 1.19$ $p = .278$	$F(3,139) = 20.52$ $p < .001$***	$F(3,139) = 0.95$ $p = .420$	.02	30.82 (0.85)	25.97 (0.89)	24.98 (0.89)	24.93 (0.91)
DAS-SC	$F(1,139) = 0.14$ $p = .713$	$F(3,139) = 32.75$ $p < .001$***	$F(3,139) = 0.79$ $p = .500$	.02	70.11 (2.77)	53.28 (2.85)	53.28 (2.85)	51.72 (2.89)
Dis	$F(1,139) = 0.84$ $p = .362$	$F(3,139) = 32.55$ $p < .001$***	$F(3,139) = 1.22$ $p = .304$	.03	6.56 (0.25)	4.98 (0.27)	4.17 (0.27)	4.37 (0.27)
Int	$F(1,139) = 0.67$ $p = .413$	$F(3,139) = 31.48$ $p < .001$***	$F(3,139) = 2.47$ $p = .064$	.05	6.55 (0.28)	4.91 (0.30)	3.78 (0.30)	4.13 (0.31)

BDI-II	$F(1,136) = 0.30$ $p = .583$	$F(3,136) = 14.51$ $p < .001$***	$F(3,136) = 2.38$ $p = .072$	.05	16.81 (1.70)	10.46 (1.59)	8.32 (1.29)	8.73 (1.40)
EDEQ-sc	$F(1,139) = 2.22$ $p = .138$	$F(3,139) = 7.59$ $p < .001$***	$F(3,139) = 0.44$ $p = .726$	.01	2.68 (0.27)	2.15 (0.27)	1.87 (0.26)	1.83 (0.24)
EDEQ-wc	$F(1,139) = 2.00$ $p = .159$	$F(3,139) = 6.75$ $p < .001$***	$F(1,139) = 2.08$ $p = .105$	.04	2.44 (0.27)	2.02 (0.25)	1.73 (0.27)	1.66 (0.24)
EDEQ-total	$F(1,139) = 2.37$ $p = .126$	$F(3,139) = 8.12$ $p < .001$***	$F(3,139) = 1.27$ $p = .288$	.03	1.93 (0.22)	1.57 (0.22)	1.31 (0.21)	1.18 (0.16)
FNE-B	$F(1,93) = 0.00$ $p = .988$	$F(3,93) = 11.17$ $p < .001$***	$F(3, 93) = 0.67$ $p = .571$	.02	49.41 (2.55)	41.82 (2.60)	40.75 (2.62)	41.08 (2.62)
ASI-3	$F(1,97) = 0.92$ $p = .340$	$F(3,97) = 9.43$ $p < .001$***	$F(3,97) = 0.72$ $p = .540$	.02	24.90 (2.39)	17.91 (2.12)	16.55 (1.61)	15.20 (1.68)
RSES	$F(1,139) = 0.00$ $p = .986$	$F(3,139) = 20.57$ $p < .001$***	$F(3,139) = 2.53$ $p = .060$	.05	25.42 (0.61)	27.48 (0.62)	28.82 (0.69)	29.44 (0.78)
QLES-Q	$F(1,139) = 0.33$ $p = .569$	$F(3,139) = 12.25$ $p < .001$***	$F(3,139) = 0.21$ $p = .890$	.00	3.23 (0.13)	3.53 (0.13)	3.73 (0.13)	3.70 (0.14)

Note. Change in subscript for a variable denotes that a significant change occurred. Pre-tx = pre-treatment; Post-tx = post-treatment; CM = Concern over Mistakes subscale of the Frost Multidimensional Perfectionism Scale (FMPS); PS = Personal Standards subscale of the FMPS; DA = Doubts about Actions subscale of the FMPS; CPQ = Clinical Perfectionism Questionnaire; DAS-SC = Dysfunctional Attitudes Scale-Self-Criticism; Distress = Rating of Distress caused by perfectionism; Interference = Rating of interference caused by perfectionism; BDI-II = Beck Depression Inventory-II; EDEQ-sc = Shape Concerns subscale of the Eating Disorder Examination Questionnaire (EDEQ); EDEQ-wc = Weight Concerns subscale of the EDEQ; EDEQ-total = EDEQ total score; FNE-B= Brief Fear of Negative Evaluation Scale; ASI-3 = Anxiety Sensitivity Index-3; RSES= Rosenberg Self-esteem Scale; Q-LES-Q-18 = Quality of Life Enjoyment and Satisfaction Questionnaire-18.
* $p < .05$ ** $p < .01$ *** $p < .001$

Table 12.

Significance of Change and Effect Sizes between Pre-treatment and Post-treatment, Pre-treatment and 3-month Follow-up, and Pre-treatment and 6-month Follow-up for the Entire Sample.

Measure	*Pre- to post-treatment change*	Cohen's *d*	*Pre-treatment to 3-month follow-up*	Cohen's *d*	*Pre-treatment to 6-month follow-up*	Cohen's *d*
CM	$t(139) = 6.78$, $p < .001$***	1.13	$t(139) = -6.73$, $p < .001$***	1.08	$t(139) = 7.45$, $p < .001$***	1.13
PS	$t(139) = 5.17$, $p < .001$***	0.66	$t(139) = 5.51$, $p < .001$***	0.67	$t(139) = 5.11$, $p < .001$***	0.66
DA	$t(139) = 4.43$, $p < .001$***	0.76	$t(139) = 5.98$, $p < .001$***	0.97	$t(139) = 6.51$, $p < .001$***	1.10
CPQ	$t(139) = 5.53$, $p < .001$***	0.99	$t(139) = 6.65$, $p < .001$***	1.07	$t(139) = 6.56$, $p < .001$***	1.02
DAS-SC	$t(139) = 7.81$, $p < .001$***	1.07	$t(139) = 7.81$, $p < .001$***	1.02	$t(139) = 8.34$, $p < .001$***	1.07
Distress	$t(139) = 5.88$, $p < .001$***	0.98	$t(139) = 8.89$, $p < .001$***	1.55	$t(139) = 7.97$, $p < .001$***	1.32
Interference	$t(139) = 5.28$, $p < .001$***	0.89	$t(139) = 8.90$, $p < .001$***	1.56	$t(139) = 7.63$, $p < .001$***	1.31
EDEQ-sc	$t(139) = 3.28$, $p = .001$**	0.30	$t(139) = 4.19$, $p < .001$***	0.48	$t(139) = 4.53$, $p < .001$***	0.54
EDEQ-wc	$t(139) = 2.63$, $p = .010$**	0.25	$t(139) = 4.31$, $p < .001$***	0.40	$t(139) = 4.00$, $p < .001$***	0.47

BDI-II	$t(136) = 3.70, p < .001$***	0.63	$t(136) = 5.93, p < .001$***	0.88	$t(136) = 5.80, p < .001$***	0.85
EDEQ-total	$t(139) = 2.81, p = .006$**	0.25	$t(139) = 3.86, p < .001$***	0.44	$t(139) = 4.93, p < .001$***	0.62
FNE-B	$t(93) = 4.36, p < .001$***	0.84	$t(93) = 4.89, p < .001$***	0.83	$t(93) = 4.70, p < .001$***	0.94
ASI-3	$t(97) = 3.89, p < .001$***	0.55	$t(97) = 4.16, p < .001$***	0.72	$t(97) = 5.23, p < .001$***	0.82
RSES	$t(139) = -3.38, p = .001$**	0.52	$t(139) = -6.88, p < .001$***	0.82	$t(139) = -6.86, p < .001$***	0.92
Q-LES-Q	$t(139) = -3.17, p = .002$**	0.40	$t(139) = -5.43, p < .001$***	0.68	$t(139) = 4.96, p < .001$***	0.58

Note. CM = Concern over Mistakes subscale of the Frost Multidimensional Perfectionism Scale (FMPS); PS = Personal Standards subscale of the FMPS; DA = Doubts about Actions subscale of the FMPS; CPQ = Clinical Perfectionism Questionnaire; DAS-SC = Dysfunctional Attitudes Scale-Self-Criticism; Distress = Distress of perfectionism; Interference = Interference from perfectionism; BDI-II = Beck Depression Inventory-II; EDEQ-sc = Shape Concerns subscale of the Eating Disorder Examination Questionnaire (EDEQ); EDEQ-wc: Weight Concerns subscale of the EDEQ; EDEQ-total= EDEQ total score; FNE-B= Brief Fear of Negative Evaluation Scale; ASI-3 = Anxiety Sensitivity Index-3; RSES = Rosenberg Self-esteem Scale; Q-LES-Q-18 = Quality of Life Enjoyment and Satisfaction Questionnaire-18.
* $p < .05$ ** $p < .01$ *** $p < .001$

3.9.9. Reliable Change

Table 13 displays the number and percentage of individuals from the intervention condition and the waitlist control condition (prior to the waitlist control participants receiving group CBT-CP) who experienced reliable change on the outcome variables. This table also displays the number and percentage of individuals from the *treated* control group who experienced reliable change on the outcome variables. Fisher's exact 1-sided tests indicated that a significantly greater proportion of participants in the group CBT-CP condition demonstrated reliable change in dimensions of perfectionism (CM, DA, DAS-SC), shape concerns (EDEQ-sc), self-esteem (RSES) and quality of life (Q-LES-Q) compared to the waitlist control condition. Fisher's exact 1-sided tests indicated that once those from the waitlist control group received group CBT-CP, there were no longer significant differences between conditions in the proportion of participants exhibiting reliable change on these outcomes. Thus, individuals from the treated control group made comparable gains to individuals from the treatment group on these outcomes. The last four columns in Table 13 display the number and percentage of participants from the entire sample who experienced reliable change on the outcome measures immediately after receiving group CBT-CP and at 6-month follow-up.

Table 13.

Number (%) of Participants in the Intervention and Control Conditions Experiencing Reliable Change at Post-treatment/Post-Waitlist, the Number (%) of Participants in the Treated Control Condition Experiencing Reliable Change After Treatment, and the Number (%) of Participants from the Entire Sample Experiencing Reliable Change After Treatment.

Measure	Treatment (n = 19)		Control (n = 20)		Fisher's exact test (1-sided)	Treated Control (n = 17)		Fisher's exact test (1-sided)	Entire sample after group CBT-CP (n=36)		Entire sample at 6-month follow-up (n=34)	
	↓ *n*, %	↑ *n*, %	↓*n*, %	↑ *n*, %		↓*n*, %	↑ *n*, %		↓*n*, %	↑ *n*, %	↓*n*, %	↑ *n*, %
CM	12 (63%)[a]	0 (0%)	1 (5%)	1 (5%)	$p < .001$***	9 (53%)	0 (0%)	$p = .736$	21 (58%)	0 (0%)	18 (53%)	0 (0%)
PS	7 (37%)	0 (0%)	3 (15%)	0 (0%)	$p = .116$	7 (41%)	1 (6%)	$p = 1.00$	14 (39%)	1 (3%)	11 (32%)	1 (3%)
DA	6 (32%)	0 (0%)	1 (5%)	3 (15%)	$p = .044$*	6 (35%)	1 (6%)	$p = 1.00$	12 (33%)	1 (3%)	15 (44%)	0 (0%)
CPQ	7 (37%)	0 (0%)	3 (15%)	0 (0%)	$p = .155$	4 (24%)	1 (6%)	$p = .481$	11 (31%)	1 (3%)	10 (29%)	0 (0%)
DAS-SC	12 (63%)	0 (0%)	2 (10%)	1 (5%)	$p = .001$**	11 (65%)	1 (6%)	$p = 1.00$	23 (64%)	1 (3%)	19 (56%)	0 (0%)
BDI-II[b]	6 (35%)	1 (6%)	3 (17%)	2 (11%)	$p = .192$	5 (29%)	1 (6%)	$p = 1.00$	11 (31%)	2 (6%)	14 (44%)	0 (0%)
EDEQsc	4 (21%)	1 (5%)	0 (0%)	1 (5%)	$p = .047$*	3 (18%)	0 (0%)	$p = 1.00$	7 (19%)	1 (3%)	7 (21%)	0 (0%)

EDEQwc	3 (16%)	0 (0%)	0 (0%)	0 (0%)	p = .106	1 (6%)	0 (0%)	p = .345	4 (11%)	0 (0%)	6 (18%)	0 (0%)
EDEQtot	5 (26%)	2 (11%)	1 (5%)	0 (0%)	p = .080	4 (24%)	0 (0%)	p = .577	9 (25%)	2 (6%)	13 (38%)	0 (0%)
FNE-B [b]	9 (69%)	0 (0%)	5 (38%)	3 (23%)	p = .119	4 (36%)	0 (0%)	p = .115	13 (36%)	0 (0%)	16 (70%)	2 (9%)
ASI-3 [b]	2 (17%)	0 (0%)	3 (20%)	2 (13%)	p = .612	3 (23%)	0 (0%)	p = .541	5 (14%)	0 (0%)	7 (29%)	0 (0%)
QLESQ[c]	1 (5%)	5 (26%)	2 (10%)	0 (0%)	p = .020*	2 (12%)	4 (24%)	p = 1.00	3 (8%)	9(25%)	1 (3%)	15 (44%
RSES[c]	1 (5%)	8 (42%)	1 (5%)	0 (0%)	p = .001**	1 (6%)	2 (12%)	p = .065	2 (6%)	10(28%)	0 (0%)	14(41%)

Note. ↓ *n %:* the number and percentage of participants experiencing a reliable decrease on an outcome variable; ↑ *n, %*: the number and percentage of participants experiencing a reliable increase on an outcome variable; CM = Concern over Mistakes subscale of the Frost Multidimensional Perfectionism Scale (FMPS); PS = Personal Standards subscale of the FMPS; DA = Doubts about Actions subscale of the FMPS; CPQ = Clinical Perfectionism Questionnaire; DAS-SC = Dysfunctional Attitudes Scale-Self-Criticism; BDI-II = Beck Depression Inventory-II; EDEQ-sc = Shape Concerns subscale of the Eating Disorder Examination Questionnaire (EDEQ); EDEQ-wc: Weight Concerns subscale of the EDEQ; EDEQ-total = EDEQ total score; FNE-B= Brief Fear of Negative Evaluation Scale; ASI-3 = Anxiety Sensitivity Index-3; Q-LES-Q-18 = Quality of Life Enjoyment and Satisfaction Questionnaire-18; RSES: Rosenberg Self-esteem Scale.

a Percentages are rounded.

b BDI-II: n = 17 in treatment condition, n = 18 in control condition; n = 17 in treated control condition; n = 34 total who received treatment; n = 32 at 6-month follow-up
FNE-B: n = 13 in treatment condition, n =13 in control condition; n = 11 in treated control condition; n = 24 total who received treatment; n = 23 at 6-month follow-up
ASI-3: n = 12 in treatment condition, n = 15 in control condition; n = 13 in treated control condition; n = 25 total who received treatment; n = 24 at 6-month follow-up

c An increase in score suggests an improvement.

* p < .05. ** p < .01. *** p < .001

3.9.10. Clinically Significant Change in Perfectionism

Table 14 displays the number and percentage of individuals from the intervention and waitlist control condition classified as recovered, improved, unchanged and deteriorated based on their change in CM and CPQ scores between baseline and post-treatment/post-waitlist (Hageman & Arrindell, 1999). In regard to CM, Fisher's exact 1-sided tests indicated that a significantly greater proportion of participants from the group CBT-CP condition were deemed recovered compared to the waitlist control condition. A significantly greater proportion of participants from the waitlist control condition were deemed unchanged compared to the group CBT-CP condition. Fisher's exact 1-sided tests revealed that once the waitlist control group received group CBT-CP, the conditions no longer significantly differed in the proportion of participants deemed recovered or unchanged on the CM outcome variable. Therefore, the treated control group made similar clinically significant improvements in CM to the treatment group following group CBT-CP.

In regard to CPQ scores, Fisher's exact 1-sided tests indicated that there were no significant differences between the group CBT-CP condition and waitlist control condition in the proportion of individuals deemed recovered, improved, unchanged or deteriorated. Once the waitlist control group received the group CBT-CP, there were still no significant differences between the treated control group and treatment group in the proportion of individuals classified as recovered, improved, unchanged or deteriorated on the CPQ outcome variable.

Once the entire sample had received group CBT-CP, the total percentages of participants deemed to be recovered, improved, unchanged and deteriorated based on their CM and CPQ scores at post-treatment and 6-month follow-up were calculated (Hageman & Arrindell, 1999). These percentages are displayed in Table 15.

Table 14.

Number (%) of Participants in the Intervention and Control Conditions Deemed Recovered, Improved, Unchanged and Deteriorated at Post-treatment/Post-waitlist and the Number (%) of Participants in the Treated Control Condition Deemed Recovered, Improved, Unchanged and Deteriorated at Their Post-treatment.

Measure	Intervention (n=19)	Control (n = 20)	Fisher's exact test (1-sided)	Treated Control (n = 17)	Fisher's exact test (1-sided)
CM					
Recovered	6 (32%)	0 (0%)	p = .008**	2 (12%)	p = .153
Improved	6 (32%)	1 (5%)	p = .039*	7 (41%)	p = .401
No change	7 (37%)	18 (90%)	p = .001**	8 (47%)	p = .389
Deteriorated	0 (0%)	1 (5%)	p = .513	0 (0%)	p = 1.00
CPQ					
Recovered	0 (0%)	0 (0%)	p = 1.00	2 (12%)	p = .216
Improved	7 (37%)	3(15%)	p = .116	2 (12%)	p = .087
No change	12 (63%)	17(85%)	p = .116	12 (71%)	p = 1.00
Deteriorated	0 (0%)	0 (0%)	p = 1.00	1 (6%)	p = .513

Note. CM = Concern over Mistakes subscale of the Frost Multidimensional Perfectionism Scale (FMPS); CPQ = Clinical Perfectionism Questionnaire.

* $p < .05$. ** $p < .01$. *** $p < .001$

Table 15.

Number (%) of Participants from the Entire Sample Deemed Recovered, Improved, Unchanged and Deteriorated between Pre-treatment and Post-treatment and between Pre-treatment and 6-month Follow-up.

	Pre-post treatment CM (*n* = 36)	Pre-treatment to 6-month follow-up CM (*n* = 34)	Pre-post treatment CPQ (*n*=36)	Pre-treatment to 6-month follow-up CPQ (*n* = 34)
Recovered	8 (22%)	9 (26%)	2 (6%)	5 (15%)
Improved	13 (36%)	9 (26%)	9 (25%)	5 (15%)
No change	15 (42%)	16 (47%)	24 (67%)	24 (71%)
Deteriorated	0 (0%)	0 (0%)	1 (3%)	0 (0%)

Note. CM = Concern over Mistakes subscale of the Frost Multidimensional Perfectionism Scale (FMPS); CPQ = Clinical Perfectionism Questionnaire.

3.9.11. Clinically Significant Change in Psychological Disorders

Fisher's exact 1-sided tests indicated that a significantly higher proportion of participants in the group CBT-CP condition demonstrated pre-post recovery from depression compared to the waitlist control condition (p =.035). Significant differences did not emerge between the proportions of participants in the intervention and waitlist control condition who recovered from an eating disorder (p = .083), obsessive-compulsive disorder (p = .371) social phobia (p = .262) or generalised anxiety disorder (p = .171). Fisher's 1-sided tests could not be conducted to assess for group differences in recovery from panic disorder with or without agoraphobia as the waitlist control condition did not contain any participants who had a baseline diagnosis of panic disorder with or without agoraphobia.

Once participants from the waitlist control condition received group CBT-CP, there were no longer significant differences between the treatment and treated control conditions in the proportions of participants who recovered from depression. Thus, the treated control group made comparable recovery from depression following group CBT-CP. Table 16 displays the total number and percentage of individuals with a psychological disorder at pre-treatment who recovered from their disorder immediately after group CBT-CP and at 6-month follow-up. Over 80 per cent of the individuals with a pre-treatment diagnosis of depression or obsessive-compulsive disorder no longer met these diagnoses at post-treatment. Two thirds of the individuals with panic disorder with or without agoraphobia at pre-treatment no longer met this diagnosis at post-treatment. One third to one half of the individuals who had an eating disorder, social phobia or generalised anxiety disorder at pre-treatment no longer had these diagnoses at post-treatment. At 6-month follow-up, over 80 per cent of the individuals with a pre-treatment diagnosis of depression, an eating disorder, obsessive-compulsive disorder, generalised anxiety disorder or panic disorder with or without agoraphobia no longer met these diagnoses. Two thirds of the individuals with social phobia at pre-treatment no longer had this diagnosis at 6-month follow-up.

Table 16.

Number (%) of Participants with a Disorder at Pre-treatment who Recovered from the Disorder at Post-treatment and at 6-month Follow-up

Disorder	*n* with the disorder at pre-treatment	(*n*, %) who recovered from the disorder at post-treatment	(*n*, %) who recovered from the disorder at 6-month follow-up
Depression	13	12 (92%)	11 (87%)
Eating Disorder	10	4 (40%)	8 (80%)
Obsessive-Compulsive Disorder	6	5 (83%)	5 (83%)
Social Phobia	6	3 (50%)	4 (67%)
Generalised Anxiety Disorder	30	10 (33%)	24 (80%)
Panic Disorder	3	2 (67%)	3 (100%)

3.10. Discussion

The primary aim of this study was to conduct an RCT to investigate the efficacy of group CBT-CP in a clinical sample. As previous RCTs have not examined group delivery of this intervention in a clinical sample (e.g., Riley et al., 2007), this study uniquely contributes to the literature. A secondary aim was to examine whether group CBT-CP significantly increases quality of life. Previous perfectionism treatment trials have not included a quality of life outcome measure (Pleva & Wade, 2006; Riley et al., 2007; Steele & Wade, 2008). Therefore, this study provides unique information about whether group CBT-CP has a

multidimensional impact of reducing perfectionism and psychopathology, as well as improving quality of life.

3.10.1. The Effect of Group CBT-CP on Dimensions of Perfectionism

Based on group CBT-CP targeting the maintaining factors of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010), as well as previous research demonstrating that CBT-CP reduces CPQ scores and other dimensions of perfectionism (Riley et al., 2007; Steele et al., 2013), it was anticipated that participants randomised to receive group CBT-CP would display significantly greater reductions in all measured dimensions of perfectionism relative to participants in the waitlist control condition. It was also anticipated that once the waitlist control condition received group CBT-CP they would display comparable reductions in these perfectionism dimensions, and that for the entire sample these reductions would be maintained at 3-month and 6-month follow-ups. The current findings supported all hypotheses. Group CBT-CP produced reductions of moderate to large effect size in perfectionism as measured by CPQ, PS, CM, DA, DAS-SC, as well as in the distress and interference associated with perfectionism. The waitlist control condition made comparable gains once they received the treatment. Post-treatment decreases in all perfectionism dimensions were maintained at 3-month and 6-month follow-ups. These findings support group CBT-CP producing lasting decreases in clinical perfectionism and related dimensions of perfectionism.

The finding of group CBT-CP producing significantly greater changes in CPQ scores than a waitlist control group is in line with the findings from Riley et al.'s (2007) RCT of individual CBT-CP. The current finding adds to the validity of maintenance models of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010) by accenting that CBT targeting these maintaining factors actually leads to

significant reductions in clinical perfectionism. Additionally, this is the first RCT to demonstrate that CBT-CP produces significantly greater decreases in PS, CM, DA and DAS-SC scores in addition to CPQ scores than a separate waitlist control group. Previous RCTs have not reported significant interaction effects for perfectionism as assessed by the multidimensional scales and these trials did not measure DAS-SC (Pleva & Wade, 2008; Riley et al., 2007; Steele & Wade, 2008). As the interaction effects for the multidimensional perfectionism measures arose in a trial of group CBT-CP but not in previous trials of individual CBT-CP, it would be beneficial for future studies to examine whether group CBT-CP has greater efficacy than individual CBT-CP. This could be investigated by conducting an RCT that compares group CBT-CP and individual CBT-CP to a waitlist control condition. If group CBT-CP is found to have greater efficacy than individual CBT-CP, future studies could examine the particular aspects of group therapy that contribute to its greater efficacy. For example, specific therapeutic factors proposed to occur in group but not individual CBT could be examined (e.g., clients experiencing inclusion, the effect of clients learning from other group members) to determine if these factors can significantly predict treatment outcome (Bieling et al., 2006; Yalom, 1995; Yalom & Leszcz, 2005).

Moreover, this is the first RCT to demonstrate that CBT-CP produces significantly greater decreases in the interference and distress associated with perfectionism than a waitlist control condition. Previous RCTs have not assessed the impact of this intervention on these outcomes (Pleva & Wade, 2007; Riley et al., 2007; Steele & Wade, 2008). Steele et al.'s (2013) case design study reported reductions in interference and distress following group CBT-CP; however, due to the absence of a separate control condition, Steele et al.'s (2013) findings cannot be

confidently attributed to group CBT-CP. The higher internal validity of the current RCT means that one can state with greater confidence that group CBT-CP has produced the current findings.

3.10.2. The Effect of Group CBT-CP on Psychopathology and Self-Esteem

Based on the literature of perfectionism occurring across depressive, anxiety and eating disorders (Egan et al., 2011) as well as the findings of Study I of this thesis, it was anticipated that participants receiving group CBT-CP would experience significantly greater reductions in a range of psychopathology symptoms relative to those in the waitlist control condition. Furthermore, as Shafran et al. (2002) argued that CBT-CP assists individuals to expand the domains upon which they base their self-esteem, it was anticipated that this treatment would increase self-esteem. It was expected that the waitlist control participants would make comparable changes in these outcomes after receiving group CBT-CP and that the entire sample would maintain these gains at the follow-ups. Consistent with predictions, participants receiving group CBT-CP exhibited significantly greater decreases in depression (BDI-II), eating disorder symptoms, social anxiety and anxiety sensitivity, as well as significantly greater increases in self-esteem relative to those in the waitlist control condition. Comparable changes on these outcomes were made after the waitlist control participants received group CBT-CP. For the whole sample, decreases in these psychological symptoms and increases in self-esteem were maintained at the 3-month and 6-month follow-ups. Collectively, these findings provide support for Egan et al.'s (2011) argument of perfectionism being a transdiagnostic process by demonstrating that CBT targeting clinical perfectionism produces significant lasting effects on multiple forms of psychopathology.

The findings of group CBT-CP leading to decreases in depression as measured by the BDI-II are consistent with Riley et al.'s (2007) findings and the body of literature supporting the role of perfectionism dimensions in depression (e.g., Enns & Cox, 1999; Wheeler et al., 2011). Even so, it is intriguing why significant interaction effects for depression as measured by DASS-depression did not emerge. Such a discrepancy in findings may have arisen from differences in clinical sensitivity between the BDI-II and DASS-depression, which needs to be explored in future studies. The finding of group CBT-CP leading to reductions in anxiety sensitivity is in accord with Radhu et al.'s (2012) findings in a student sample; however, the current use of a clinical sample now enables this finding to be generalised to clinical populations. The current finding is also consistent with previous research showing perfectionism to be associated with anxiety sensitivity in a clinical sample (Cox et al., 2001).

This RCT is the first to demonstrate that group CBT-CP significantly decreases eating disorder symptoms, social anxiety, as well as increases self-esteem. The significant effects of this treatment on eating disorder symptoms concurs with the literature highlighting the role of perfectionism dimensions in eating disorder pathology (e.g., Bardone-Cone et al., 2007); however, such findings differ from those of Steele and Wade (2008) who found that guided self-help CBT for perfectionism produced comparable effects on eating disorder symptoms to that of other treatments in the trial. This is another rationale for future studies to compare the efficacy of group CBT-CP to individual CBT-CP. Another reason for the discrepancy in findings may have been because the current study utilised a waitlist control condition, whereas Steele and Wade's (2008) placebo condition of

dismantled mindfulness (Segal et al., 2002) was argued to have therapeutic components.

The significant effect of group CBT-CP on social anxiety is unique as previous RCTs of perfectionism treatments have not included measures of this construct (Pleva & Wade, 2006; Riley et al., 2007; Steele & Wade, 2008). The current findings are in accordance with previous studies highlighting the role of perfectionism dimensions in social anxiety (Juster et al., 1996; Lundh & Ost, 2001; Saboonchi et al., 1999). The significant effects of group CBT-CP on self-esteem have not been reported, as in Steele and Wade's (2008) study such effects did not emerge. This may have been due to the current study implementing a group intervention or utilising a waitlist control. The current findings of significant increases in self-esteem support the validity of the model of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010) and are consistent with the proposition that CBT-CP assists individuals to realise that their self-worth is not dependent on achievement, which translates into increases in self-esteem (Shafran et al., 2002).

Although there were trends of group CBT-CP producing greater decreases in DASS-anxiety and DASS-stress than a waitlist control condition, the interaction effects for these outcomes were not significant. The non-significant findings for DASS-anxiety are in line with those of previous RCTs (Pleva & Wade, 2006; Steele & Wade, 2008). While Steele et al. (2013) found that participants receiving group CBT-CP demonstrated significant pre-post reductions in DASS-anxiety and DASS-stress, the absence of a separate control group in this study meant that these effects may have occurred due to confounds such as the passage of time. The absence of significant interaction effects for DASS-anxiety and DASS-stress in the current study are unusual given the significant interaction effects demonstrated for social

anxiety and anxiety sensitivity. It is possible that group CBT-CP may result in smaller effects for the type of anxiety captured by the DASS-anxiety scale as compared to social anxiety and anxiety sensitivity and that the current RCT and earlier RCTs (e.g., Pleva & Wade, 2006; Steele & Wade, 2008) did not have sufficient power to capture these effects. Another possibility is that DASS-anxiety is not as clinically sensitive as the FNE-B and ASI-3 (Tabachnick & Fidell, 2007). Future studies utilising larger samples and additional measures of anxiety are required to determine the effect of group CBT-CP on different aspects of anxiety. Nevertheless, the current findings do suggest that CBT-CP does significantly decrease social anxiety and anxiety sensitivity.

In this study, group CBT-CP tended to produce greater reductions in pathological worry than a waitlist control condition; however, the interaction effect for pathological worry was not significant. This is intriguing given that Study I of this thesis reported significant relationships between CM, PS, CPQ and pathological worry in a clinical sample. It is likely that Type II errors occurred in the current study. The impact of group CBT-CP on pathological worry may be smaller than the impact of group CBT-CP on social anxiety and anxiety sensitivity, which may have meant that the current sample size of 42 was not sufficient to capture this effect (Tabachnick & Fidell, 2007). While an alternative explanation may be that group CBT-CP is not a sufficient treatment for generalised anxiety disorder symptoms, this explanation does not fit with the current findings of recovery from a generalised anxiety disorder (GAD) diagnosis. Specifically, one third of the individuals with GAD at pre-treatment no longer met a GAD diagnosis at post-treatment, and 80 per cent of individuals with GAD at pre-treatment no longer met this diagnosis at 6-month follow-up. This provides indirect evidence for reductions in GAD

symptomatology following group CBT-CP. Future studies utilising larger samples are required to clarify these findings.

Furthermore, in this study, no significant interaction effect for obsessive-compulsive symptoms was found. This is again puzzling given that previous studies have found significant relationships between CM, DA and obsessive-compulsive symptoms in clinical samples (Antony, Purdon, et al., 1998). The current non-significant finding also differs from Pleva and Wade's (2006) findings of guided self-help CBT for perfectionism producing greater decreases in obsessive-compulsive symptoms than pure self-help CBT for perfectionism. Nevertheless, the current non-significant finding may have occurred due to composition of the current sample. There were small numbers of individuals with OCD in the intervention (n = 4) and control (n = 3) groups compared to individuals with disorders such as depression. This likely meant that baseline OCI-R scores were not high to begin with potentially creating a floor effect (Rosnow & Rosenthal, 2002). Alternatively, the non-significant finding may also be because group CBT-CP did not include specific exposure and response prevention components, which have been repeatedly shown to reduce OCD symptoms (Kobak, Greist, Jefferson, Katzelnick, & Henk, 1998). However, this latter explanation does not fit with the current findings of recovery from an OCD diagnosis where 83 per cent of individuals with OCD at pre-treatment no longer had an OCD diagnosis at post-treatment and at 6-month follow-up. Future studies utilising larger samples are needed to clarify these findings.

3.10.3. The Effect of Group CBT-CP on Quality of Life

Based on arguments of perfectionism treatments potentially decreasing numerous psychological disorders (Bieling, Summerfeldt, et al., 2004; Egan et al., 2011), and findings of psychological disorders being associated with a lower quality

of life (Mond et al., 2004b; Pirkola et al., 2009; Rapaport et al., 2005), it was anticipated that participants receiving group CBT-CP would demonstrate significantly greater increases in quality of life scores at post-treatment compared to participants in the waitlist control group. It was also expected that the waitlist control participants would make comparable changes in quality of life scores after receiving group CBT-CP and that for the entire sample this increase in quality of life would be maintained at the 3-month and 6-month follow-ups. Results supported all hypotheses. This is the first RCT to report that CBT-CP produces significant increases in quality of life that last for at least six months. Previous RCTs of perfectionism treatments have not examined the impact of this treatment on quality of life (Pleva & Wade, 2006; Riley et al., 2007; Steele & Wade, 2008). These findings uniquely contribute to the literature as they demonstrate that CBT-CP not only reduces perfectionism and psychological symptoms, but also enhances life enjoyment and satisfaction (Rapaport et al., 2005).

3.10.4. Reliable and Clinically Significant Change

It was anticipated that changes in perfectionism, psychopathology, self-esteem and quality of life would not only happen at a group level but also at an individual level (Jacobson & Truax, 1991; Hageman & Arrindell, 1999). Consistent with predictions, a significantly greater proportion of individuals in the group CBT-CP condition exhibited reliable change in CM, DA, DAS-SC, shape concerns, self-esteem and quality of life than the waitlist control condition. These findings highlight that genuine changes in perfectionism, shape concerns, self-esteem and quality of life are produced following group CBT-CP (Jacobson & Truax, 1991). In comparison to Pleva and Wade's (2006) findings, it appears that a greater proportion of participants exhibited reliable change in CM and DA, and a comparable

proportion of participants exhibited reliable change in PS after group CBT-CP compared to guided and pure self-help CBT; however, statistical analyses comparing the proportions of reliable change in the current study and in Pleva and Wade's (2006) study would be needed to test this. Previous RCTs of perfectionism treatments have not examined whether treatment and control conditions differ in the proportion of individuals experiencing reliable change in DAS-SC, shape concerns, self-esteem or quality of life, thus the current findings contribute to the literature.

Interestingly, there were no significant differences in the proportions of participants experiencing reliable change in CPQ scores, depression, social anxiety or anxiety sensitivity in the group CBT-CP compared to the waitlist control condition. The absence of a significant finding for CPQ scores was particularly intriguing given that the intervention targets clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010). However, these non-significant findings do not necessarily mean that group CBT-CP does not produce meaningful individual change in these outcome variables. Rather, this finding may have arisen because the current calculations of reliable change required the pre-intervention standard deviations of the outcome measures, which were large due to the use of a sample size of $n = 42$. This meant that the reliable change indices were very conservative (Jacobson & Truax, 1991; Tabachnick & Fidell, 2007). Future studies should investigate whether a significantly greater proportion of participants in a group CBT-CP condition demonstrate reliable change relative to a control condition utilising larger samples or population norms. Under these circumstances, the standard deviation would be more accurate and thus the criteria for reliable change would be more realistic (Jacobson & Truax, 1991; Tabachnick & Fidell, 2007).

The hypothesis regarding clinically significant change in CM and CPQ was partially supported. Consistent with predictions, it was found that a significantly greater proportion of individuals in the group CBT-CP condition exhibited clinically significant change in perfectionism (CM) relative to the waitlist control condition. Once participants from the waitlist control condition received group CBT-CP, they demonstrated a comparable level of clinically significant change in CM to that of the intervention group. These findings alone suggest that group CBT-CP has assisted participants to shift away from a dysfunctional population defined by the presence of CM, which supports the efficacy of group CBT-CP (Hageman & Arrindell, 1999; Jacobson & Truax, 1991).

However, inconsistent with predictions, there were no significant differences in the proportions of individuals experiencing clinically significant change in CPQ scores in the group CBT-CP condition compared to the waitlist control condition. Furthermore, once the entire sample had received group CBT-CP, the total proportions of participants who experienced clinically significant change in CM and CPQ scores were quite low. Clinically significant change in CM was exhibited by 22 per cent of participants at post-treatment and 26 per cent of participants at 6-month follow-up. Clinically significant change in CPQ scores was exhibited by 6 per cent of participants at post-treatment and 15 per cent at 6-month follow-up.

Nonetheless, it is likely that the current findings of relatively small proportions of participants exhibiting clinically significant change in CM and CPQ scores are artefacts of the very conservative cut-offs for clinical significance (Jacobson & Truax, 1991). Specifically, the absence of population norms for perfectionism meant that the cut-off utilised was two standard deviations below the mean of the dysfunctional population, which Jacobson and Truax (1991)

acknowledged can be conservative. Furthermore, in accordance with previous literature (Riley et al., 2007), the pre-treatment means and standard deviations of the current sample were utilised. Standard deviations derived from samples are typically larger than those derived from populations (Tabachnick & Fidell, 2007). Consequently, very conservative cut-offs for clinical significance were employed, which likely resulted in a lower number of participants being deemed clinically significantly changed. While significant group differences in the proportions of individuals experiencing clinically significant change in CM still emerged, the conservative cut-offs may explain the non-significant group differences in the proportions of individuals experiencing clinically significant change in CPQ scores. It also may explain the relatively small proportions of individuals from the entire sample who experienced clinically significant change in CM and CPQ scores (Jacobson & Truax, 1991).

Previous perfectionism treatment trials in clinical samples have not calculated clinically significant change on the multidimensional perfectionism measures (Riley et al., 2007; Steele & Wade, 2008). Steele et al.'s (2013) case design study found higher percentages of clinically significant change in CPQ scores (21 per cent at post-treatment and 32 per cent at 3-month follow-up) than in the current study; however, this may have arisen due to differences in the standard deviations across samples creating different cut-off points for clinical significance across studies (Jacobson & Truax, 1991). Riley et al. (2007) calculated clinical significance in terms of change in scores on the CPE and found that 75 per cent of participants experienced clinically significant change. While this percentage is higher than the percentages reported in the current study, the clinically significant change documented in Riley et al.'s (2007) study was in a different measure that

only has moderate convergent validity (r = .57) with the CPQ (Riley et al., 2007). Furthermore, Riley et al.'s (2007) sample had a higher mean CPQ score at baseline than the current study and likely differed in its standard deviation, thus caution is needed in comparing findings. Future studies need to calculate clinical significance once population norms for perfectionism have been established (Jacobson & Truax, 1991).

The hypothesis regarding recovery from psychological disorders was partially supported. A significantly greater proportion of participants in the group CBT-CP condition demonstrated recovery from depression at post-treatment compared to the waitlist control condition. Once those from the waitlist group received group CBT-CP, they made a comparable level of recovery from depression to that exhibited by the treatment group. These findings suggest that group CBT-CP results in individuals no longer meeting a diagnosis of depression, even though the intervention did not directly focus on the symptoms of depression. This is a novel finding as there is limited research highlighting this effect. Pleva and Wade (2006) and Steele and Wade (2008) did not examine change in diagnoses in their RCTs. While Riley et al. (2007) found that individuals had a decreased number of diagnoses following individual CBT-CP, they did not specify whether it was a reduction in participants' anxiety disorder or depression diagnoses.

While a greater number of individuals from the group CBT-CP condition tended to recover from their eating disorders and anxiety disorders compared to the waitlist control condition, these differences were not significant. Nevertheless, these findings do not necessarily mean that group CBT-CP does not lead to a recovery from these disorders. Rather, these findings may be an artefact of the small numbers of participants with certain diagnoses in each condition as well as the DSM-IV-TR

(APA, 2000) criteria for disorder diagnosis. The number of participants with diagnoses of obsessive-compulsive disorder, social phobia and an eating disorder in each condition were lower than the number of participants with depression per condition, thus there may not have been sufficient power for these effects to be detected. The non-significant differences in the proportions of individuals recovering from eating disorders and generalised anxiety disorder between conditions may also be due to the DSM-IV-TR (APA, 2000) diagnostic criteria for these disorders. A diagnosis of an eating disorder is based on the presence of symptoms over the most recent three months, whereas a diagnosis of generalised anxiety disorder is based on the presence of symptoms over the past six months. Thus, it was difficult for clients to no longer meet these latter two diagnoses over an eight week period even if they had benefitted from group CBT-CP (DSM-IV-TR; APA, 2000). As the design of the study was such that participants originally in the waitlist control condition then received group CBT-CP, one was not able to see if significant differences emerged between the intervention and control condition over longer periods of time.

Even so, there is indirect evidence to support participants no longer meeting depressive, anxiety and eating disorder diagnoses following participating in group CBT-CP. For the entire sample, high percentages of individuals with pre-treatment diagnoses of depression, social phobia, obsessive-compulsive disorder and panic disorder with or without agoraphobia no longer met their diagnoses at post-treatment. While post-treatment recovery from eating disorders and generalised anxiety disorder were lower than the other disorders, this was likely due to the DSM-IV-TR (APA, 2000) criteria for these disorders as discussed above. The percentages of recovery from all psychological disorders were high six months after receiving

group CBT-CP. Overall, these findings are consistent with group CBT-CP being associated with recovery from psychological disorders and concur with the literature of perfectionism being a transdiagnostic process (Egan et al., 2011). Nonetheless, due to the waitlist control participants receiving the group CBT-CP after eight weeks, one cannot discount that these latter findings emerged due to the passage of time (Tabachnick & Fidell, 2007). Future studies need to incorporate a design where participants in the waitlist condition remain on the waitlist for a slightly longer duration to see if significant group differences in recovery occur.

3.10.5. Strengths of this Study

There are a number of strengths of this study. An RCT design was utilised and the sample size was sufficient to detect moderate to large treatment effects. Furthermore, all measures had high internal consistency and validity. Together, these features ensured that the study had high internal validity (Chambless & Hollon, 1998; Faul et al., 2007). Additionally, all psychologists were trained in administering the CBT-CP treatment protocol (Shafran et al., 2010) and closely adhered to this protocol when administering the treatment. GLMM was utilised for analyses of statistically significant change, which presents numerous advantages over traditional statistical techniques (Holden et al., 1998). In addition to statistically significant change, reliable and clinically significant change were calculated, which is important when evaluating the efficacy of an intervention (Chambless & Hollon, 1998; Jacobson & Truax, 1991; Hageman & Arrindell, 1999).

3.10.6. Limitations of this Study

The limitations of this study require discussion. It was important for ethical reasons to have a design where participants who had been in the waitlist control condition received group CBT-CP after eight weeks. This meant that the active

intervention condition could only be directly compared to the waitlist control condition at post-treatment, which limited assessment of whether the group CBT-CP condition still significantly differed from the waitlist control condition at 6-month follow-up.

Additionally, the current design compared an active intervention (group CBT-CP) to a waitlist control condition but did not have an active treatment comparison condition. Researchers have argued that this design provides information about whether the treatment works (Chambless & Hollon, 1998), or at least does no harm compared to if participants received no treatment at all (Lilienfeld, 2007). Nonetheless, one still cannot discount that the effects of group CBT-CP emerged from participants' expectations of change or the impact of receiving attention from the therapist (Chambless & Hollon, 1998). Future studies need to conduct RCTs that compare group CBT-CP to another active treatment condition and a waitlist control condition. If group CBT-CP demonstrates superiority to another active treatment condition and a waitlist control condition, it would be classed as efficacious and specific (Chambless & Hollon, 1998). If this other active treatment condition was a disorder-specific treatment, this would provide preliminary evidence to support group CBT-CP being utilised as a first line treatment for individuals presenting with that disorder (Egan et al., 2012).

Other limitations require discussion. As the primary researcher (Handley) conducted all assessments and therapy groups, it was not possible for the primary researcher to be blind to participants' randomisation condition when conducting the post-treatment, post-waitlist and follow-up assessments. This may have introduced bias into the data (Tabachnick & Fidell, 2007). Moreover, having the primary researcher conduct the post-treatment assessments may have increased the likelihood

of participants who had just received the active intervention responding in such a way as to please their therapist. This is likely in this sample given clinical reports of individuals with perfectionism aiming to be a perfect client in a therapy context (e.g., Hirsch & Hayward, 1998). Future studies need to utilise assessors who are blind to participants' randomisation condition.

While the current sample included individuals who had diverse psychological disorders, the majority of individuals presented with a principal diagnosis of GAD, with smaller numbers of participants with diagnoses of obsessive-compulsive disorder, social phobia and panic disorder with or without agoraphobia. Future research needs to utilise samples with a greater diversity of psychological disorders to better enable findings to be generalised to these populations. Finally, the absence of population norms for perfectionism variables meant that very conservative clinical cut-offs were utilised. Future studies need to calculate population norms for perfectionism variables and then calculate the cut-offs for clinical significance on the basis of these norms (Jacobson & Truax, 1991).

3.10.7. Conclusions

Taking into account all of the findings of this RCT, group CBT-CP has been shown to significantly decrease multiple dimensions of perfectionism, numerous psychological symptoms, as well as increase self-esteem and quality of life, with treatment gains lasting for at least six months. There was support for reliable change in CM, DA, DAS-SC, eating disorder symptoms, self-esteem and quality of life, as well as some clinically significant change in CM and recovery from psychological disorders. This is the first study to contribute toward establishing the efficacy of group CBT-CP (Chambless & Hollon, 1998). The findings of this study have significant clinical implications. Given the high prevalence of diagnostic co-

morbidity in community samples (Kessler, Chiu, et al., 2005), if psychologists can administer this transdiagnostic treatment instead of consecutively treating a client's psychological disorders, this could result in substantial time savings for the psychologist and the client, as well as decreased cost for the client (Craske, 2012; Egan et al., 2012). Furthermore, administering this treatment in a group format could bestow additional time and cost savings (APS, 2013; Himle et al., 2003), as well as potential therapeutic benefits relative to individual administration of this treatment (Bieling et al., 2006; Yalom, 1995; Yalom & Leszcz, 2005).

CHAPTER 4

General Discussion

4.1. Overview

This thesis presented two linked studies that aimed to increase the knowledge of perfectionism and how it can be treated. This chapter provides a summary of the major findings of each study, how these findings uniquely contribute to the literature and the implications of these findings. The strengths and limitations of this research are discussed. Directions for future research are outlined prior to the conclusion.

4.2. Major Findings, Unique Contributions and Implications

4.2.1. Major findings of Study I. The first aim of Study I was to investigate the relationships between perfectionism dimensions and pathological worry in individuals with elevated perfectionism and generalised anxiety disorder (GAD) who presented for perfectionism treatment. The second aim was to investigate whether perfectionism dimensions can significantly predict a principal diagnosis of GAD in a larger clinical sample with elevated perfectionism and a range of diagnoses who presented for perfectionism treatment. This study was an important precursor to Study II as it provided a rationale for Study II to examine whether group CBT for clinical perfectionism (group CBT-CP) can reduce the symptoms of GAD in addition to the symptoms of other psychological disorders (Egan et al., 2011).

In regard to the first aim, Concern over Mistakes (CM), Personal Standards (PS) and Clinical Perfectionism Questionnaire (CPQ) scores each significantly predicted pathological worry and remained significant after accounting for gender, anxiety and depression. This indicated that the relationships between these perfectionism dimensions and pathological worry in this clinical sample are not due to the associations that perfectionism dimensions have with anxiety and depression

(Egan et al., 2011). The significant relationship between CM and pathological worry was in accord with the research findings utilising non-clinical samples (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001). The significant association between PS and pathological worry differed from the findings of non-clinical samples (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001); however, was congruent with research that found PS to be related to anxiety symptoms in other clinical samples (Iketani et al., 2002a; 2002b). The current finding suggested that PS is not a purely positive construct as posited by Stoeber and Otto (2006). Together, the findings of PS and CM being significantly associated with pathological worry provided empirical support for the theorised links between elevated personal standards, concern over mistakes and worry (Flett, Madorsky, et al., 2002; Pratt et al., 1997).

The significant association between CPQ scores and pathological worry extended Chang and Sanna's (2012) findings by highlighting that clinical perfectionism has relationships with pathological worry in addition to the relationships it has with anxiety and stress. The current finding demonstrated that this relationship exists in a clinical sample of individuals with elevated perfectionism and GAD. The relationship between CPQ scores and pathological worry also provided empirical support for the theorised links between clinical perfectionism and adverse consequences such as worry (Shafran et al., 2002; Shafran et al., 2010).

The finding of Doubts about Actions (DA) not having a significant relationship with pathological worry did not concur with previous research in non-clinical samples (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001). This non-significant finding may have occurred due to DA being measured as an independent construct rather than as a composite construct of

CM+DA as in previous research (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001). Alternatively, due to the sample size, as well as all participants having elevated perfectionism, there may have been a restriction of range of the outcome variables or a Type II error (Tabachnick & Fidell, 2007).

In regard to the second aim, DA significantly predicted a principal diagnosis of GAD, which supported its influence in this disorder. This finding was consistent with previous research showing DA to have predictive utility in other disorders such as obsessive-compulsive disorder and social phobia (Antony, Purdon, et al., 1998). Nevertheless, it was intriguing that DA did not significantly predict pathological worry, yet it significantly predicted a principal diagnosis of GAD. It was also unusual that CM, PS and CPQ scores significantly predicted pathological worry but not a principal diagnosis of GAD; however, the sample size and the reduced diversity arising from the high percentage of individuals with a principal diagnosis of GAD may have prevented these relationships from emerging in this sample (Tabachnick & Fidell, 2007).

4.2.2. Unique contributions of Study I to the literature. The findings of Study I provide multiple unique contributions to the literature. This is the first study to demonstrate in a clinical sample that significant relationships exist between CM, CPQ scores and pathological worry. Previous studies had not examined these relationships in a clinical sample (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001). This study is also the first to find a significant relationship between PS and pathological worry across clinical and non-clinical samples, as the non-clinical studies did not find this relationship (Kawamura et al., 2001; Santanello & Gardner, 2007; Stoeber & Joormann, 2001) and it has not previously been measured in clinical samples. This is only the third study to

demonstrate in a clinical sample that PS is significantly associated with anxiety symptoms. A final unique contribution of this study is the finding of DA significantly predicting a principal diagnosis of GAD in a clinical sample with a range of diagnoses. Previous studies have not investigated whether perfectionism dimensions can predict a diagnosis of this disorder (Antony, Purdon, et al., 1998). These unique findings have implications for the conceptualisation of perfectionism, as well as the conceptualisation, assessment and treatment of GAD.

4.2.3. Implications of Study I. The findings of CM being related to pathological worry and DA being associated with a principal diagnosis of GAD add weight to the notion of maladaptive evaluative concerns (CM, DA, PE, PC, SPP) being associated with psychopathology (Egan et al., 2011). Notably however, the finding of PS being associated with pathological worry suggests that positive achievement striving (PS, O, SOP) is not a purely positive construct as put forward by Stoeber and Otto (2006). This discovery contributes to the growing body of research supporting dimensions of positive achievement striving being associated with psychopathology (Bardone-Cone et al., 2007; Bardone-Cone et al., 2008; Cox et al., 2001; Flett & Hewitt, 2006; Hewitt & Flett, 1993; Iketani et al., 2002a, 2002b). The current finding also provides a rationale for future studies to examine the circumstances under which positive achievement striving is adaptive and maladaptive (Egan et al., 2012). The discovery of CPQ scores being associated with pathological worry supports the validity of Shafran et al.'s (2002) clinical perfectionism definition by providing support for theorised associations between clinical perfectionism and negative outcomes such as worry. This finding also supports the validity of the Clinical Perfectionism Questionnaire (Fairburn et al., 2003b) in a sample with elevated perfectionism and GAD.

By highlighting that CM, PS, DA and CPQ scores are associated with GAD symptomatology, these findings add weight to the argument of perfectionism being a transdiagnostic process (Egan et al., 2011). Additionally, these findings highlight the need to include questions about perfectionism in the initial assessment session for clients presenting with GAD, with a view to including perfectionism in a client's formulation if it is maintaining his/her GAD symptoms (Egan et al., 2011; Egan et al., 2012). Importantly for this thesis, these findings provided a rationale for Study II and future studies to investigate whether perfectionism interventions can reduce the symptoms of GAD in addition to the symptoms of other psychological disorders (Bieling, Summerfeldt, et al., 2004; Egan et al., 2011).

The findings of Study I also provide impetus for future research to investigate whether CM, PS, DA and CPQ scores are uniquely associated with the symptoms of GAD after accounting for the constructs from established models of GAD (Dugas et al., 1998; Wells, 1995, 1999). If the findings from cross-sectional studies support the unique predictive utility of these perfectionism dimensions, prospective studies could investigate whether CM, PS, DA and CPQ scores are uniquely associated with the onset and maintenance of GAD symptoms (Dugas et al., 1998; Wells, 1995, 1999). If support is obtained for CM, PS, DA and CPQ scores prospectively predicting the onset and maintenance of GAD symptoms after accounting for the constructs in established models of GAD (Dugas et al., 1998; Wells, 1995, 1999), there would be sufficient rationale to update existing theoretical models of GAD to recognise the role of perfectionism (Dugas et al., 1998, Wells, 1995, 1999).

If existing theoretical models of GAD (Dugas et al., 1998; Wells, 1995, 1999) are updated, a similar model expansion to that of Fairburn et al.'s (2003)

transdiagnostic model of eating disorders could occur, where perfectionism is classed as an additional maintaining factor that may interact with the other maintenance factors of GAD (Dugas et al., 1998; Wells, 1995, 1999). This model expansion is consistent with Shafran et al.'s (2002) proposition of clinical perfectionism interacting with the primary maintenance factors of a disorder to maintain the disorder and negatively affect treatment. In regard to Dugas et al.'s (1998) model, elevated perfectionism could possibly interact with intolerance of uncertainty to more frequently trigger the worry cycle (Buhr & Dugas, 2006; Dugas et al., 1998). Alternatively, elevated perfectionism could potentially interact with positive beliefs about worry to increase the tendency to engage in and persist with the worry process (Dugas et al., 1998; Pratt et al., 1997). In regard to Wells' (1995, 1999) meta-cognitive model, elevated perfectionism could possibly interact with positive meta-beliefs about the need to engage in Type 1 worry to cope, which may trigger the worry process. If an individual experiences negative consequences associated with worry (e.g., experiencing worries as more intrusive), this may interact with their elevated perfectionism to more strongly activate and reinforce negative meta-beliefs about worry, leading to the occurrence of Type 2 worry (Wells, 1995, 1999). Based on this updated model, future studies could examine whether the efficacy of current psychological interventions for GAD (Dugas et al., 1998; Wells, 1995, 1999) could be increased through the addition of a treatment module targeting elevated perfectionism.

4.2.4. Major findings of Study II. The primary aim of Study II was to conduct an RCT to investigate the efficacy of group CBT-CP in a clinical sample. A secondary aim was to investigate whether group CBT-CP significantly increases quality of life. Participants receiving group CBT-CP exhibited significantly greater

pre-post reductions in all dimensions of perfectionism (CPQ, PS, CM, DA, Dysfunctional Attitude Scale-Self-Criticism scores), as well as in the distress and interference associated with perfectionism relative to participants from the waitlist control condition. Once participants from the waitlist control condition received group CBT-CP they made comparable gains to the treatment condition. For the entire sample, post-treatment reductions in all perfectionism measures were maintained at 3-month and 6-month follow-ups. The significant effect of group CBT-CP on CPQ scores was consistent with Riley et al.'s (2007) findings. It supported the validity of maintenance models of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010) and the validity of the CPQ as a measure of clinical perfectionism (Fairburn et al., 2003b). The significant effect of group CBT-CP on CM, PS and DA differed from the findings of RCTs of individual perfectionism treatments (Pleva & Wade, 2008; Riley et al., 2007; Steele & Wade, 2008), which provided a rationale for future research to examine whether group CBT-CP is more efficacious than individual CBT-CP. The significant effect of group CBT-CP on DAS-SC scores as well as the distress and interference associated with perfectionism were consistent with the findings from Steele et al.'s (2013) case series design; however, as the current study used an RCT design, the current findings can be better attributed to group CBT-CP.

Participants receiving group CBT-CP displayed significantly greater pre-post decreases in depression (BDI-II), eating disorder symptoms, social anxiety and anxiety sensitivity, as well as significantly greater pre-post increases in self-esteem compared to those from the waitlist control condition. Once the waitlist control participants received group CBT-CP they made comparable changes on these variables to the treatment condition. For the entire sample, post-treatment gains were

maintained at 3-month and 6-month follow-ups. Together, these findings offered support for perfectionism being a transdiagnostic process (Egan et al., 2011).

The significant effects of group CBT-CP on depression (BDI-II), anxiety sensitivity and social anxiety were in line with the literature reporting relationships between perfectionism dimensions and these symptoms (e.g., Cox et al., 2001; Enns & Cox, 1999; Juster et al., 1996; Lundh & Ost, 2001; Wheeler et al., 2011). The findings for BDI-II and anxiety sensitivity were consistent with the treatment findings of Riley et al. (2007) and Radhu et al. (2012) respectively; whereas the finding for social anxiety provides a unique contribution to the literature. The significant effect of group CBT-CP on eating disorder symptoms was congruent with the literature supporting the associations between perfectionism dimensions and eating disorder pathology (Bardone-Cone et al., 2007). The significant effect of group CBT-CP on self-esteem supported the validity of the maintenance model of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010) and was in line with the proposition of CBT-CP increasing self-esteem through helping individuals to realise that their self-esteem is not singularly dependent on achievement (Shafran et al., 2002; Shafran et al., 2010). Nevertheless, the current findings for eating disorder pathology and self-esteem differed from those of Steele and Wade (2008), which was argued to provide impetus for future research to examine the efficacy of group CBT-CP compared to individual CBT for perfectionism.

Group CBT-CP tended to produce greater decreases in pathological worry, obsessive-compulsive symptoms, DASS-anxiety and DASS-stress than the waitlist control condition; however, these effects were not significant. The non-significant finding for pathological worry was inconsistent with the findings reported in Study I of this thesis; however, likely arose due to a Type II error (Tabachnick & Fidell,

2007). The non-significant finding for obsessive-compulsive symptoms differed from previous findings of perfectionism dimensions being related to obsessive-compulsive symptoms (Antony, Purdon, et al., 1998), and differed from the findings of Pleva and Wade's (2006) treatment trial; however may have been due the small numbers of individuals with baseline OCD diagnoses creating a floor effect (Rosnow & Rosenthal, 2002). The non-significant finding for DASS-anxiety was consistent with previous RCTs (Pleva & Wade, 2006; Steele & Wade, 2008); however, the non-significant findings for DASS-anxiety and DASS-stress differed from Steele et al.'s (2013) case series design findings. The current non-significant findings were intriguing given the significant effect of group CBT-CP on social anxiety and anxiety sensitivity. It was argued that group CBT-CP may have had a smaller treatment effect for the type of anxiety measured by DASS-anxiety compared to social anxiety and anxiety sensitivity, and that there was inadequate power for this effect to be detected. Another possibility put forward was that DASS-anxiety may be less clinically sensitive than measures of social anxiety and anxiety sensitivity (Tabachnick & Fidell, 2007).

The second aim was to investigate whether group CBT-CP significantly increases quality of life. Participants receiving the intervention demonstrated significantly greater pre-post increases in quality of life compared to those in the waitlist control condition. Once the waitlist control participants received group CBT-CP they made comparable gains and the entire sample maintained their post-treatment gains at 3-month and 6-month follow-ups. This is a new finding and has implications for the multidimensional effect of group CBT-CP.

In regard to reliable change, a significantly greater proportion of individuals from the group CBT-CP condition exhibited pre-post reliable change in CM, DA,

DAS-SC scores, eating disorder symptoms, self-esteem and quality of life relative to the waitlist control condition. These differences between conditions became non-significant once participants from the waitlist control condition received group CBT-CP. These findings supported group CBT-CP producing meaningful changes in these outcomes at an individual level in addition to a group level (Jacobson & Truax, 1991). Interestingly, there were no significant differences between the treatment condition and the waitlist control condition in the proportions of individuals experiencing reliable change in CPQ scores, depression (BDI-II), social anxiety and anxiety sensitivity; however, this may have been due to the conservative cut-offs for reliable change used in this study (Jacobson & Truax, 1991).

In relation to clinically significant change, a significantly greater proportion of individuals from the group CBT-CP condition experienced pre-post clinically significant change in CM compared to the waitlist control condition. This difference became non-significant after the waitlist control participants received group CBT-CP. These findings supported the efficacy of group CBT-CP (Chambless & Hollon, 1998; Jacobson & Truax, 1991). However, there were no significant differences between the treatment and waitlist control condition in the proportions of individuals experiencing pre-post clinically significant change in CPQ scores. This was unusual given that the intervention targeted clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010). After the entire sample had received group CBT-CP, clinically significant change in CM was exhibited by 22 per cent of individuals at post-treatment and 26 per cent at 6-month follow-up; whereas clinically significant change in CPQ scores was exhibited by 6 per cent of individuals at post-treatment and 15 per cent at 6-month follow-up. The non-significant differences between conditions in the proportions of participants experiencing clinically significant

change in CPQ scores, and the low total percentages of clinically significant change occurring in CM and CPQ scores were argued to be due to the very conservative cut-offs for clinical significance used in this study (Jacobson & Truax, 1991; Riley et al., 2007).

A significantly greater proportion of participants from the group CBT-CP condition experienced recovery from depression compared to the waitlist control condition. This difference became non-significant once the waitlist control participants received group CBT-CP. This finding suggested that group CBT-CP results in individuals no longer meeting a diagnosis of depression. There were no significant differences between conditions in the proportions of individuals who recovered from the other psychological disorders; however, this may have been a by-product of the small number of participants with certain diagnoses per condition and the timeframes of the criteria for particular diagnoses (DSM-IV-TR, APA, 2000). For the total sample, the percentages of individuals who recovered from depression, an eating disorder, obsessive-compulsive disorder, social phobia, GAD and panic disorder with or without agoraphobia were high at 6-month follow-up. This provided indirect support for group CBT-CP being associated with recovery from psychological disorders six months after treatment.

4.2.5. Unique contributions of Study II to the literature. This study provides many unique contributions to the literature. It is the first RCT to investigate the efficacy of group CBT-CP in a clinical sample. As this study has higher internal validity than previous studies examining group CBT-CP (Egan & Stout, 2007; Steele et al., 2013), the current findings can be better attributed to this intervention. This is the first RCT to show that CBT targeting perfectionism produces significantly greater decreases in CM, PS, DA, DAS-SC scores, as well as the distress and

interference associated with perfectionism relative to a waitlist control condition. Previous RCTs did not find significant interaction effects for the measures of multidimensional perfectionism and did not measure DAS-SC or the distress or interference associated with perfectionism (Pleva & Wade, 2006; Riley et al., 2007; Steele & Wade, 2008). This study is the first to demonstrate that group CBT-CP leads to significantly greater decreases in eating disorder pathology and social anxiety as well as significantly greater increases in self-esteem compared to a control condition. A previous perfectionism treatment trial found that CBT for perfectionism exhibited comparable effects on eating disorder pathology and self-esteem to other conditions in the trial (Steele & Wade, 2008) and previous trials in this area have not included a measure of social anxiety (Pleva & Wade, 2006; Riley et al., 2007; Steele & Wade, 2008). Additionally, this is the first perfectionism treatment trial to find that CBT-CP significantly increases quality of life. Other perfectionism treatment trials have not incorporated a quality of life outcome measure (Pleva & Wade, 2006; Riley et al., 2007; Steele & Wade, 2008).

The reliable and clinically significant change findings also uniquely contribute to the literature. This study is the first to show that CBT-CP produces significantly greater reliable change in DAS-SC scores, eating disorder symptoms, self-esteem and quality of life than a waitlist control condition. Previous RCTs of perfectionism treatments have not examined reliable change in these measures (Pleva & Wade, 2006; Riley et al., 2007; Steele & Wade, 2008). This is the first study to find that group CBT-CP produces significantly greater clinically significant change in CM and recovery from depression than a waitlist control condition. Group differences in clinically significant change in CM and recovery from psychological disorders have not previously been examined. Finally, this study is the first to report

high percentages of recovery from multiple psychological disorders six months after receiving group CBT-CP. These unique findings have implications for the validity of the maintenance model of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010) and the establishment of group CBT-CP as a possibly efficacious treatment (Chambless & Hollon, 1998). These findings also contribute toward the evidence base for CBT-CP as a transdiagnostic treatment (Egan et al., 2011; Egan et al., 2012).

4.2.6. Implications of Study II. The findings from Study II provide evidence that CBT-CP delivered in a group format works in that it is able to produce reductions in multiple measures of perfectionism and psychopathology, and produce increases in self-esteem and quality of life (Chambless & Hollon, 1998). Importantly, it provides evidence that group CBT-CP does no harm compared to if participants received no treatment at all (Lilienfeld, 2007). The current findings provide support for the validity of Shafran et al.'s (2002) conceptualisation of clinical perfectionism and the maintenance model of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010) by highlighting that CBT targeting the maintaining factors of clinical perfectionism yields significant changes in perfectionism, psychopathology and self-esteem. Such evidence further informs the debate regarding how to best conceptualise perfectionism (Hewitt et al., 2003; Shafran et al., 2002; Shafran et al., 2003).

The current findings also contribute toward establishing the efficacy of group CBT-CP (Chambless & Hollon, 1998). It is important to note that one cannot yet conclude from these findings that group CBT-CP is an efficacious intervention, as this is only the first of two studies required to establish efficacy. An additional RCT conducted by independent researchers producing non-contradictory results is needed

to establish the efficacy of this intervention. The current findings provide a rationale for this second RCT to be conducted (Chambless & Hollon, 1998).

Regardless, the impact of the current findings cannot be dismissed. The current findings still result in group CBT-CP being labelled a possibly efficacious treatment (Chambless & Hollon, 1998). These findings also provide evidence that group CBT-CP has a multidimensional impact of decreasing perfectionism and psychopathology, as well as enhancing self-esteem and quality of life. Based on the World Health Organisation's (1948, p. 100) definition of health as "a state of complete physical, mental and social well-being and not merely the absence of disease", this intervention significantly increases individuals' overall health. Psychologists are therefore presented with an alternative format for delivering CBT-CP that offers greater time efficiency for psychologists and substantial cost savings for clients relative to individually administered CBT-CP (APS, 2013; Himle et al., 2003). In a society where there are long waitlists for psychological services at Government organisations and Government rebates only provided for 10 psychology sessions per year, it is valuable for psychologists to have another method of delivering CBT-CP (APS, 2013; Egan et al., 2012; Himle et al., 2013). Group delivery of this intervention may also enable clients to receive additional therapeutic benefits relative to individual administration of this treatment (Bieling et al., 2006; Yalom, 1995; Yalom & Leszcz, 2005). Therefore, these findings have given psychologists a beneficial alternative format of delivering CBT-CP.

On a broader scale, the current findings add to the evidence base of CBT for perfectionism being an efficacious transdiagnostic treatment (Pleva & Wade, 2006; Riley et al., 2007; Steele & Wade, 2008). By increasing this evidence-base, psychologists are given an increasingly credible transdiagnostic alternative to

disorder-specific treatment protocols (Egan et al., 2012). Given the high co-morbidity of psychological disorders (Kessler, Berglund, et al., 2005; Kessler, Chiu, et al., 2005), the administration of this transdiagnostic treatment rather than the sequential administration of disorder-specific treatment protocols may create additional time-efficiency for the psychologist and client, and may produce cost-savings for the client (Craske, 2012; Egan et al., 2012).

Nonetheless, Egan et al. (2012) have advised that psychologists need to carefully consider their decision to administer this transdiagnostic treatment instead of a disorder-specific treatment protocol. This is because there is still a greater evidence base for disorder-specific treatments compared to transdiagnostic treatments. Egan et al. (2012) have put forward guidelines specifying when CBT targeting perfectionism should be implemented. If elevated perfectionism is the primary problem with which a client presents, and the client's formulation indicates that elevated perfectionism is the primary factor maintaining other psychological symptoms, CBT-CP can be administered (Egan et al., 2012; Shafran et al., 2002; Shafran et al., 2010). If the primary presenting problem is an eating disorder, anxiety disorder or depression, where elevated perfectionism is a maintaining factor but other disorder-specific factors have a more important maintenance role, the psychologist should first administer the evidence-based treatment for that specific disorder. If a client's perfectionism impedes their progress with this disorder-specific treatment, the psychologist should switch to delivering CBT-CP until the client's perfectionism symptoms have ameliorated. If symptoms of the psychological disorder are still present, the psychologist should recommence the disorder-specific treatment (Egan et al., 2012; Shafran et al., 2002). Egan et al. (2012) posited that due to the imbalance of evidence for transdiagnostic treatments versus disorder-specific

treatments, it is currently difficult to advise which treatment to administer when a client presents with multiple disorders. These researchers recommended that for a client with co-morbidities, the psychologist needs to be guided by their formulation of which disorder-specific and transdiagnostic factors maintain the client's disorders.

Egan et al.'s (2012) guidelines are sensible based on the current state of the empirical evidence for transdiagnostic versus disorder-specific treatments. Nonetheless, the findings of this RCT highlight the importance of continued research investigating the efficacy of CBT-CP to contribute to the evidence-base for this transdiagnostic treatment. Importantly, RCTs examining the efficacy of CBT-CP compared to disorder-specific treatments and control conditions are needed (Egan et al., 2012). There is also a need for studies to examine the effectiveness of CBT-CP (Chambless & Hollon, 1998). Such research may lead to future revisions of Egan et al.'s (2012) guidelines, where it is recommended that CBT-CP be the first treatment option for clients presenting with an eating disorder, anxiety disorder or depression, or multiple disorders that are maintained by perfectionism.

4.3. Strengths and Limitations of the Current Research

4.3.1. Strengths and limitations of Study I. There are many strengths of Study I. The measures utilised to assess the constructs in this study have all shown high internal consistency and validity in previous studies (Antony, Bieling, et al., 1998; Antony, Purdon, et al., 1998; Beck et al., 1996; Chambless & Hollon, 1998; Egan, Shafran, et al., 2014; Frost et al., 1990; Meyer et al., 1990) and demonstrated high internal consistencies in the current study. Diagnoses of GAD were assigned by administering a reliable and valid structured interview (MINI; Sheehan et al., 1998) that is based on the standardised criteria of the DSM-IV-TR (APA, 2000). The interviewer had had four years of experience administering this measure and baseline

diagnoses were assigned while the interviewer was blind to participants' scores on the self-report measures. Accuracy of GAD diagnoses was confirmed through supervision with an experienced clinical psychologist (Egan). The use of these reliable and valid self-report measures and structured interviews reduces the error variance in the data (Tabachnick & Fidell, 2007).

There are also strengths in the result analyses. Prior to analyses, data was screened to ensure that statistical assumptions had not been violated to further ensure result accuracy (Holden et al., 2008). When zero-order correlations indicated that gender, depression and anxiety were related to pathological worry, these variables were controlled in the hierarchical regression analyses. This ensured that the relationships between perfectionism dimensions and pathological worry were independent of the associations perfectionism has with anxiety and depression (Egan et al., 2011). Collectively, the strengths of this study increase the accuracy of the current findings.

The limitations of this study require discussion. The size of the sample, as well as all participants having elevated perfectionism may have prevented significant relationships between variables from emerging in this sample (Tabachnick & Fidell, 2007). Additionally, this study did not include a non-clinical control group so one could not examine whether individuals with GAD have significantly higher CM, PS, DA and CPQ scores compared to non-clinical controls. Moreover, 71 per cent of the entire sample had a principal diagnosis of GAD. The latter two limitations further reduced the diversity of the sample, which may have also prevented significant relationships from arising (Tabachnick & Fidell, 2007). Future studies examining the relationship between perfectionism and GAD symptomatology should include larger samples with a range of perfectionism levels. These studies should incorporate non-

clinical control groups as well as clinical groups with a greater diversity of diagnoses.

Another limitation is that this study did not examine whether CM, PS, DA and CPQ had unique predictive utility above other constructs included in models of GAD, such as intolerance of uncertainty and meta-beliefs about worry (Dugas et al., 1998; Wells, 1995, 1999; Wells & Carter, 1999). Future studies should account for these constructs to examine whether CM, PS, DA and CPQ still explain unique variance in GAD symptoms in a clinical sample. A final limitation is that this study had a cross-sectional design. Consequently, the only inferences that can be made are that CM, PS and CPQ scores are associated with pathological worry and that DA is associated with a principal diagnosis of GAD. It cannot be inferred that these perfectionism dimensions cause the symptoms of GAD. Future studies need to utilise prospective designs to examine whether CM, PS, DA and CPQ precede the onset of GAD symptoms.

4.3.2. Strengths and limitations of Study II. There are multiple strengths of Study II. These strengths arise from the primary researcher having closely adhered to Chambless and Hollon's (1998) guidelines for conducting an efficacy trial. In regard to the design of this study, an RCT design was utilised. An a priori power analysis was conducted to determine the minimum number of participants required for this study to have sufficient power to detect moderate to large treatment effects. A sample size that exceeded this minimum number was recruited. Thus, the study was adequately powered to detect moderate to large treatment effects (Faul et al., 2007; Holden et al., 2008). The use of an RCT design with an adequate sample size increases confidence that any intervention effects can be attributed to group CBT-CP (Chambless & Hollon, 1998).

Additionally, participants randomised to the group CBT-CP and waitlist control conditions did not significantly differ on any baseline demographic or outcome variables except for a diagnosis of GAD. This prevents the intervention effects from being attributed to baseline differences between conditions. Participants were required to abstain from changing their medication and/or seeking external psychological treatment between baseline and 6-month follow-up and compliance with this requirement was measured throughout the study. This means that intervention effects cannot be attributed to the effects of medication or external treatment. Collectively, the design features of this study ensure that any intervention effects can be credited to group CBT-CP (Chambless & Hollon, 1998; Tabachnick & Fidell, 2007). An additional strength of this design is that it is able to demonstrate that group CBT-CP does no harm compared to if participants received no treatment at all (Lilienfeld, 2007). A final strength of the design is that a 6-month follow-up was included, which provided important information about whether post-treatment changes are maintained over a 6-month period (Chambless & Hollon, 1998).

There are also strengths in the treatment administered. The treatment was derived from Shafran et al.'s (2010) published book, which enables the treatment to be replicated by others (Chambless & Hollon, 1998). The primary researcher had had experience delivering this treatment in a previous trial (Steele et al., 2013) and the two co-facilitators received substantial training prior to implementing the therapy. The primary researcher and co-facilitators received weekly supervision while implementing the therapy. Two clinical psychologists external to the research rated therapist adherence and competence and high ratings were obtained on both constructs (Chambless & Hollon, 1998).

There are strengths in the measurement of constructs. All self-report measures had shown high reliability and validity in previous studies (Antony, Bieling, et al., 1998; Antony, Purdon, et al., 1998; Beck et al., 1996; Chambless & Hollon, 1998; Egan et al., 2011; Foa et al., 2002; Meyer et al., 1990; Peterson et al., 2007; Riley et al., 2007; Ritsner et al., 2005; Steele & Wade, 2008). These measures also demonstrated high internal consistencies in the current study. To supplement the self-report measures, participants were administered a reliable, valid structured interview (Chambless & Hollon, 1998; Sheehan et al., 1998). The interviewer had had experience administering this measure and in assigning diagnoses. Accuracy of diagnoses was confirmed through supervision with an experienced clinical psychologist (Egan) (Chambless & Hollon, 1998). These procedures are commendable as they minimise error in the data (Tabachnick & Fidell, 2007). Furthermore, as recommended by Chambless and Hollon (1998), this research not only examined the impact of an intervention on psychopathology, but also included a measure of quality of life (Ritsner et al., 2005).

There are strengths in the analysis utilised. GLMM was utilised to analyse the data, which has multiple advantages relative to traditional statistical techniques (Bryk & Raudenbush, 1987; Dimitrov & Rumrill, 2003; Holden et al., 2008). The use of this statistical technique reduces error in the data, therefore increasing the accuracy of the findings (Holden et al., 2008). As this was a trial of a group treatment, intra-group dependencies were statistically controlled, which minimises error in the data (Kenny et al., 2002; Killip et al., 2004; Rabe-Hesketh & Skrondal, 2005). Analyses of statistically significant change were supplemented by calculations of reliable and clinically significant change. This ascertained whether changes also transpired at the level of the individual, which is vital when assessing

the efficacy of an intervention (Chambless & Hollon, 1998; Hageman & Arrindell, 1999; Jacobson & Truax, 1991).

There are also limitations of this study. Once participants from the waitlist control condition had their post-waitlist assessment, they received group CBT-CP. While this is important for ethical reasons, it meant that the direct comparison between the active intervention condition and the waitlist control condition could only occur for eight weeks. While the findings indicated that the entire sample maintained their post-treatment gains at 6-month follow-up, one could not compare whether the group CBT-CP condition significantly differed from the waitlist control condition at 6-month follow-up.

Furthermore, in this study an active treatment (group CBT-CP) was compared to a waitlist control condition but there was no active treatment comparison condition. While the data from this study provides information about whether group CBT-CP works (Chambless & Hollon, 1998), one cannot exclude the possibility that treatment effects emerged from various non-specific therapy factors such as therapist attention (Chambless & Hollon, 1998). Consequently, the current findings contribute toward establishing the efficacy of group CBT-CP, but do not enable inferences about the specificity of group CBT-CP. Future RCTs should compare group CBT-CP to another active treatment condition and a waitlist control condition to contribute toward establishing the efficacy and specificity of group CBT-CP (Chambless & Hollon, 1998).

There are also limitations in regard to the composition and size of the sample. The sample size was sufficient to detect moderate to large treatment effects; however, the study may have been underpowered to detect smaller interaction effects (Faul et al., 2007; Tabachnick & Fidell, 2007). Future studies should utilise larger

samples to examine whether significant interaction effects emerge for variables such as DASS-anxiety, DASS-stress and pathological worry. Furthermore, the sample contained small numbers of participants with a baseline diagnosis of obsessive-compulsive disorder. This likely meant that baseline levels of obsessive-compulsive symptoms were low, which may have created a floor effect, potentially accounting for the non-significant finding for obsessive-compulsive symptoms (Rosnow & Rosenthal, 2002). Additionally, the sample contained small numbers of participants with baseline diagnoses of social phobia and panic disorder with or without agoraphobia. The small numbers of individuals with social phobia may have prevented significant differences between conditions in the proportions of individuals recovering from social phobia. The small numbers of individuals with panic disorder with or without agoraphobia prevented any differences between conditions in recovery from this disorder from being examined. Future studies should include samples where there are a greater number of individuals with these diagnoses.

There are also limitations in the assessment process. The majority of the measures utilised in this study were self-report measures. Additionally, the primary researcher delivered the therapy and conducted all assessments so was not blind to participants' condition when conducting the post-treatment, post-waitlist and follow-up assessments. These factors may have biased the data (Tabachnick & Fidell, 2007). The latter limitation may have also increased the likelihood of participants from the group CBT-CP condition exaggerating their treatment gains to please the therapist. Future studies should utilise a greater amount of interviewer-administered assessments and have an interviewer blind to participants' condition to conduct the assessments (Tabachnick & Fidell, 2007).

The final limitation is the absence of established population norms for the perfectionism variables, which resulted in the use of very conservative cut-offs for the clinically significant change calculations (Jacobson & Truax, 1991; Riley et al., 2007). This likely accounted for the non-significant group differences in the proportions of individuals exhibiting clinically significant change in CPQ scores. It also likely accounted for the low total proportions of individuals who experienced clinically significant change in CM and CPQ scores after the treatment and at 6-month follow-up. Future studies need to calculate population norms for the perfectionism variables and then calculate the cut-offs for clinically significant change on the basis of these norms. This would produce more accurate estimates of clinically significant change (Jacobson & Truax, 1991).

4.4. Future Research Directions

4.4.1. Future research directions in relation to Study I. As discussed, additional studies with clinical samples are needed to further explore the relationships between perfectionism dimensions and GAD symptomatology. There is a need to examine whether perfectionism dimensions are elevated in individuals with GAD relative to individuals with other anxiety disorders and non-clinical controls. This has been examined for nearly every other depressive, eating and anxiety disorder (Antony, Purdon, et al., 1998; Bardone-Cone et al., 2007; Wheeler et al., 2011), but small sample sizes in past research have prevented this from being examined in individuals with GAD (Wheeler et al., 2011). There is also a need for cross-sectional and prospective studies to explore the utility of perfectionism dimensions in predicting GAD symptoms after controlling for other constructs posited to maintain GAD (Dugas et al., 1998; Wells, 1995, 1999), as this may lead to revisions of theoretical models of GAD (Dugas et al., 1998; Wells, 1995, 1999).

Future studies could also examine whether perfectionism is a significant predictor of poorer treatment outcome in current treatments for GAD (Dugas et al., 1998; Wells, 1995, 1999) to provide further information about whether perfectionism maintains this disorder.

As discussed, it would be beneficial for future studies to investigate whether the efficacy of psychological treatments based on current models of GAD (Dugas et al., 1997; Wells & Carter, 1999) can be increased by the addition of a treatment module targeting perfectionism. There is also a need for additional research to investigate whether CBT-CP can reduce pathological worry and other GAD symptoms. While Study II of this thesis reported trends of group CBT-CP reducing pathological worry to a greater extent than a waitlist control condition, this was not significant, which was likely due to a Type II error (Tabachnick & Fidell, 2007). Nevertheless, this study did report that one third of the individuals with GAD at pre-treatment no longer met a GAD diagnosis at post-treatment, and 80 per cent of individuals with GAD at pre-treatment no longer met this diagnosis at 6-month follow-up, which provided indirect evidence of reductions in GAD symptoms following group CBT-CP. Future studies should explore the impact of CBT-CP on GAD symptoms utilising a larger clinical sample than that used in Study II.

4.4.2. Future research directions in relation to Study II. The findings of Study II generate numerous areas for future research. As discussed, it is crucial for researchers to replicate the current study as the production of consistent findings would enable group CBT-CP to be deemed efficacious (Chambless & Hollon, 1998). There is also a need for studies to investigate the efficacy of group CBT-CP relative to conditions where non-specific processes are controlled. If group CBT-CP demonstrated superiority to these conditions, it would be labelled efficacious and

specific (Chambless & Hollon 1998). A variety of studies could be conducted to examine the efficacy and specificity of group CBT-CP. Researchers could conduct a series of RCTs where group CBT-CP is compared to individual CBT-CP, online CBT-CP and guided self-help CBT-CP, each of which would include a waitlist control condition. Such findings would also enable researchers to ascertain the most efficacious format of delivery of CBT-CP (Chambless & Hollon, 1998).

Another method of examining the efficacy and specificity of group CBT-CP is for researchers to conduct RCTs that compare group CBT-CP to group CBT for specific disorders and a waitlist control condition (Chambless & Hollon, 1998). Researchers could also compare individual CBT-CP to individual CBT for specific disorders and a waitlist control condition. Evidence in support of the efficacy and specificity of CBT-CP relative to other CBT treatments would contribute to the evidence base for this transdiagnostic treatment. This could further inform treatment recommendations for clients who present with psychological disorders that are being maintained by perfectionism (Chambless & Hollon, 1998; Egan et al., 2012).

Future RCTs could also compare CBT-CP with other transdiagnostic treatment protocols and a waitlist control condition. The comparison transdiagnostic treatment protocols may include the unified transdiagnostic intervention for emotional disorders (Bossieau et al., 2010; Ellard et al., 2010; Wilamowska et al., 2010) or Enhanced Cognitive Behaviour Therapy (Fairburn et al., 2003a). Such studies could again vary the format of delivery of these interventions by comparing group CBT-CP to group delivery of the comparison transdiagnostic treatment; or individual CBT-CP to individual delivery of the comparison transdiagnostic treatment. The findings of these studies could inform treatment approaches for

clients presenting with co-morbid disorders that are being maintained by these transdiagnostic processes (Egan et al., 2012).

The value of an intervention also needs to be demonstrated through effectiveness studies, which examine whether an intervention is beneficial in actual clinical practice (Chambless & Hollon, 1998; Lambert & Ogles, 2004). Lambert and Ogles (2004, p. 160) have argued that "the ability of researchers and evaluators to demonstrate that laboratory treatments also work in the real world will eventually lead to a better understanding of the effects of therapy as it is typically offered". Chambless and Hollon (1998) propose that there are five factors to consider when assessing the clinical utility of an intervention: generalisability across populations, generalisability across therapists and settings, patient acceptance and compliance, ease of dissemination and cost-effectiveness. A consideration of each of these factors leads to the generation of additional research opportunities.

Generalisability across populations refers to the degree to which evidence of treatment efficacy applies to the type of client that actually presents in clinical practice (Chambless & Hollon, 1998; Lambert & Ogles, 2004). While the clients in the current study were homogenous in their elevated perfectionism, the majority of the clients in this sample had co-morbid psychological disorders. This suggests that the current findings could generalise to clients presenting with elevated perfectionism and co-morbid psychological disorders in clinical practice. Even so, participants in this study were screened for exclusion criteria such as self-harm, moderate or high suicidality and anorexia nervosa, thus there is a question of whether the current findings would generalise to the full range of clients presenting in routine clinical practice (Chambless & Hollon, 1998; Lambert & Ogles, 2004). Consequently, there is a need for studies to examine the effectiveness of group CBT-

CP in samples of individuals who are engaging in self-harm, samples of individuals with moderate suicidality and samples of individuals with anorexia nervosa. There are rationales for such studies to be conducted given that the literature has reported significant relationships between perfectionism dimensions and self-harm, suicidality and anorexia nervosa (Bardone-Cone et al., 2007; Chambless & Hollon, 1998; Hewitt et al., 1996; Hewitt, Norton, et al., 1998; O'Connor et al., 2010).

Generalisability across therapists and settings refers to whether the findings from RCTs can be generalised to regular clinical settings where therapists may have lower levels of training and supervision in the treatment and potentially greater flexibility to adapt the treatment to suit client needs compared to the therapists in RCTs (Chambless & Hollon, 1998; Kendall, Holmbeck, & Verduin, 2004). In the current study, the treatment was administered by therapists who received reading material, a face to face training session and weekly supervision. Previous RCTs of individual CBT-CP were similarly conducted under conditions of high therapist training and weekly supervision (Pleva & Wade, 2006; Riley et al., 2007; Steele & Wade, 2008). It is important for future research to investigate whether comparable outcomes occur if CBT-CP is administered by psychologists with a lower amount of face to face training and supervision in the treatment (Chambless & Hollon, 1998). For example, instead of face to face training and supervision, psychologists may be given Egan, Shafran, Wade, and Antony's (in press) book 'Cognitive behavioural treatment of perfectionism' to provide instruction in applying the CBT-CP strategies. If comparable outcomes emerge, this would support the generalisation of treatment findings to a context where therapists have a lower level of training and supervision (Chambless & Hollon, 1998).

The idea that research and clinical settings differ in the flexibility of treatment administration is based on the notion that adherence to treatment manuals in research settings automatically restricts flexibility; however, there is mixed support for the veracity of this notion (Chambless & Hollon, 1998; Kendall et al., 2004). In fact, Kendall et al. (2004, p.25) asserted that "contemporary treatment manuals allow the therapist to attend to each client's specific needs, concerns and co-morbid conditions without deviating from the manual". Indeed, the current protocol involved presenting clients with the formulation of clinical perfectionism and CBT-CP strategies and then assisting clients to individualise the formulation and strategies (Shafran et al., 2002; Shafran et al., 2010). Furthermore, this transdiagnostic treatment protocol was designed to be suitable for many of the client's co-morbid disorders (Egan et al., 2011; Shafran et al., 2002; Shafran et al., 2010). Consequently, it is likely that this transdiagnostic treatment protocol would be delivered in a similar manner across research and clinical settings; therefore, it is likely that comparable findings would emerge in clinical settings. Nonetheless, future studies could investigate whether comparable treatment outcomes emerge under a condition where therapists rigorously adhere to the group CBT-CP treatment protocol versus a condition where psychologists can deviate from the protocol to suit the needs of a client (Chambless & Hollon, 1998; Kendall et al., 2004). If comparable outcomes emerge, this would support the generalisation of the current findings to a context where greater flexibility in protocol administration may occur (Chambless & Hollon, 1998; Kendall et al., 2004).

Patient acceptance and compliance relates to how acceptable the intervention is to the client as well as the probability of the client complying with the intervention (Chambless & Hollon, 1998). The current study found that 80.95 per cent of

participants completed the trial up to 6-month follow-up. Participants attended 70.25 per cent of the sessions and on average read 57.01 per cent of the weekly readings and completed 40.01 per cent of the weekly homework exercises. This provides some evidence of patient acceptance and compliance with group CBT-CP; however, future studies could further quantify the acceptability of this treatment through the use of a rating scale of acceptability. Qualitative studies could also explore the reasons for the acceptability of group CBT-CP. Future studies should continue to measure acceptance and compliance through assessing treatment completion, session attendance as well as reading and homework compliance. This would enable comparisons to occur between the acceptance and compliance demonstrated in group CBT-CP relative to other treatments such as individual CBT-CP and disorder-specific treatments (Chambless & Hollon, 1998).

Ease of dissemination refers to the ease with which a treatment can be circulated to the broader community of psychologists (Chambless & Hollon, 1998). Chambless and Hollon (1998) argued that interventions that are simple and able to be learnt easily have a greater likelihood of being disseminated relative to treatments of greater complexity. Egan et al. (2012) argued that due to transdiagnostic treatments implementing one set of treatment strategies to treat the symptoms of multiple disorders, they have greater simplicity, are easier to learn and therefore have a greater ease of dissemination compared to implementing multiple disorder-specific protocols. Nonetheless, an avenue for future research may be to further increase the ease of dissemination by considering whether additional simplifications to the group CBT-CP protocol can occur (Chambless & Hollon, 1998). Future studies could investigate the efficacy of the current group CBT-CP treatment relative to a group CBT-CP intervention that contains a smaller number of treatment components

(Shafran et al., 2010). If comparable outcomes emerge, this may assist with greater dissemination of this intervention into the community of psychologists (Chambless & Hollon, 1998).

Cost-effectiveness refers to the economic viability of administering the intervention in the short-term and long-term (Chambless & Hollon, 1998). As discussed in previous chapters, group CBT-CP may lead to reduced therapy costs for clients in the short-term relative to individual CBT-CP and disorder-specific treatments (APS, 2013; Craske, 2012; Egan et al., 2012; Himle et al., 2003). Nonetheless, Chambless and Hollon (1998) have advised that because various psychological treatments differ in the longevity of their effects, this may lead to differential access of mental health services over the long-term, which may create differences in the long-term costs of treatments. While the current findings suggest that group CBT-CP produces gains that are maintained up until at least six months, there is a need for future studies to examine whether group CBT-CP presents greater long-term cost savings to clients relative to individual CBT-CP and disorder-specific treatments (Chambless & Hollon, 1998; Egan et al., 2012; LeCrubier, 2001).

4.5. Conclusions

The overall aim of this research was to increase the knowledge of perfectionism and how it can be treated. Two principal discoveries emerged from this research. The first discovery was that dimensions of perfectionism are associated with GAD symptomatology in a clinical sample. These relationships had not previously been found in a clinical sample. The findings add weight to maladaptive evaluative concerns perfectionism and positive achievement striving perfectionism being associated with psychopathology (Bardone-Cone et al., 2007; Bardone-Cone et al., 2008; Cox et al., 2001; Egan et al., 2011; Flett & Hewitt, 2006; Hewitt & Flett,

1993; Iketani et al., 2002a, 2002b) and support the validity of Shafran et al.'s (2002) conceptualisation of clinical perfectionism. The findings provide a rationale for research to investigate whether these dimensions of perfectionism demonstrate unique predictive utility in GAD symptoms after accounting for established constructs in this disorder (Dugas et al., 1998; Wells, 1995, 1999), which may lead to the modification of current models of GAD (Dugas et al., 1998; Wells, 1995, 1999). The findings highlight the need to include questions about perfectionism when assessing clients with GAD. Most importantly for this thesis, these findings provided a rationale for Study II and future studies to investigate whether interventions focusing on perfectionism can decrease GAD symptoms in addition to the symptoms of other disorders (Egan et al., 2011).

The second discovery of this research was that group CBT-CP is an intervention that works, in that it produces improvements at a group level and an individual level in perfectionism, a variety of psychopathology, self-esteem and quality of life (Chambless & Hollon, 1998; Jacobson & Truax, 1991). This was the first RCT to evaluate group CBT-CP in a clinical sample, as well as the first RCT of a perfectionism treatment to investigate the impact of this treatment on quality of life. The current findings support the validity of Shafran et al.'s (2002) definition of clinical perfectionism, as well as the maintenance model of clinical perfectionism (Shafran et al., 2002; Shafran et al., 2010). Additionally, the findings contribute toward establishing the efficacy of group CBT-CP (Chambless & Hollon, 1998) and highlight the multidimensional effect of this treatment in reducing symptoms and improving quality of life. Psychologists are therefore presented with an alternative format of administering CBT-CP that can increase time efficiency for the psychologist, decrease costs for the client (APS, 2013; Himle et al., 2003) and

potentially provide additional therapeutic benefits compared to individual treatment (Bieling et al., 2006; Yalom, 1995; Yalom & Leszcz, 2005). Broadly, the findings contribute to the evidence base for CBT for perfectionism as a transdiagnostic treatment and provide psychologists with an increasingly credible alternative to that of disorder-specific protocols for treating clients with perfectionism and related psychopathology (Egan et al., 2011; Egan et al., 2012).

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APPENDIX A:
COVER LETTER SENT TO COLLEAGUES

Dear Colleague,

Curtin University Psychology Clinic is conducting a group cognitive behavioural therapy (CBT) program for individuals with clinical perfectionism. CBT for clinical perfectionism can effectively decrease clinical perfectionism, anxiety, depression and eating concerns. The group program will run for two hours per week over eight weeks. It is based on the book 'Overcoming Perfectionism', by Professor Roz Shafran (University of Reading, UK), Dr. Sarah Egan (Curtin University, WA), and Professor Tracey Wade (Flinders University, SA).

You are invited to refer patients who have clinical perfectionism to these groups. This includes patients who:

- Set excessively high standards even when it results in negative outcomes such as tiredness, anxiety, depression, and eating concerns
- Are very self-critical of their accomplishments
- Base their self-esteem on whether they think they have met their standards

We are running these groups to examine if group CBT is more effective in decreasing clinical perfectionism and psychological symptoms than being in an eight week waitlist control condition. Participants initially allocated to the waitlist control condition will receive group CBT for clinical perfectionism after the eight week waiting period.

We look forward to receiving your referrals. These referrals can be made by telephoning the Curtin Psychology Clinic on (08) 9266 3436 or by emailing **alicia.handley@postgrad.curtin.edu.au**

We would also appreciate you placing the enclosed advertisement in your waiting room.

Thank you,

Yours Sincerely,

Alicia Handley	Associate Professor Clare Rees	Dr. Sarah Egan
PhD Student	Clinical Psychologist	Clinical Psychologist
Curtin University	Curtin University	Curtin University

APPENDIX B:

FLYER

Curtin University

Is what you do never good enough?

Do you set excessively high standards and constantly try to reach these standards even if it leads to negative effects like tiredness, anxiety, depression and eating concerns?

Do you constantly criticise yourself? Do you feel worthless if you think you haven't reached your standards?

If you answered yes to these questions, you may be suffering from clinical perfectionism.

We will shortly be running an 8-week group treatment for clinical perfectionism at the Curtin University Psychology and Speech Clinic. This treatment will show you how to use Cognitive Behavioural Therapy (CBT) strategies to address the unhelpful aspects of your perfectionism. There will be 8 x two-hour group sessions that focus on:

- Understanding perfectionism and looking at the costs and benefits of change
- Examining common beliefs about perfectionism
- Trying out different behaviours
- Identifying and challenging unhelpful thinking styles
- Reducing procrastination and increasing time management
- Reducing self-criticism and increasing self-worth

We will be examining whether this group treatment is effective in reducing unhelpful perfectionism and related symptoms such as anxiety, depression and eating concerns.

If you are interested in participating and would like more information please email Alicia Handley at alicia.handley@postgrad.curtin.edu.au or telephone Alicia at the Curtin University Psychology and Speech Clinic on (08) 9266 3436. There is no charge for you.

*This study has been approved by the Curtin University Human Research Ethics Committee (Approval Number **HR75/2011**).*

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APPENDIX C:
PARTICIPANT INFORMATION SHEET

Information sheet
Group cognitive behavioural therapy for clinical perfectionism

Please keep this information sheet

My name is Alicia Handley, and I am a PhD student at Curtin University. For my research, I am investigating the effectiveness of a group psychological treatment for clinical perfectionism. Studies have found that high levels of perfectionism can result in people experiencing symptoms of anxiety, depression and eating disorders. Treating perfectionism may help to decrease these symptoms.

PURPOSE OF THIS RESEARCH

The purpose of this research is to investigate if group treatment for clinical perfectionism is more effective in dealing with unhelpful perfectionism and other psychological symptoms than being on a waitlist. If you wish to participate in this research you will be assigned to either a) receive the treatment for clinical perfectionism straight away, or b) wait for eight weeks and then receive the treatment. The treatment will involve coming to a 2-hour group session, once a week for 8 weeks. The sessions will be held at the Curtin University Psychology and Speech Clinic.

YOUR PARTICIPATION IS VOLUNTARY

Participation in this research is voluntary. If you do not wish to participate, you do not have to. If you choose to participate and then change your mind, you can withdraw from the research at any time without any negative consequences. If you withdraw, you can continue to have treatment at the Curtin University Psychology and Speech Clinic or you can be referred to another place for treatment.

WHAT THE RESEARCH INVOLVES

1) If you would like to participate, please read and sign the consent forms and complete the attached questionnaire, and then send them back to the Curtin University Psychology and Speech Clinic in the envelope provided.

2) I will then telephone you. During this telephone call, I will ask you some questions to see if you are suitable to receive the perfectionism treatment. At this stage, you may be encouraged to seek a different treatment that will better meet your needs. I will give you the numbers of these other places. If you are suitable for the perfectionism treatment, I will invite you to have an interview with me at the Curtin University Psychology and Speech Clinic.

3) In the interview, you will fill in some questionnaires and then you will be asked some questions about your perfectionism and any other symptoms you may have.

4) After the interview, I will allocate you to either receive the perfectionism treatment straight away or wait eight weeks and then receive the treatment. The perfectionism treatment will involve coming to a 2-hour group session once a week for 8 weeks. The group will contain 9 other people with similar concerns to

you. In these sessions, myself and another psychologist will help you to work through a self-help book on clinical perfectionism.

5) After the group treatment has finished you will be invited to have another interview with me. At this interview you will fill in some questionnaires and then will be asked about your perfectionism and any other symptoms you have. You will be invited to have another one of these interviews three months after treatment, and then six months after treatment.

OTHER THINGS TO KNOW ABOUT THIS RESEARCH

Potential benefits of this research: Previous studies have found that treating clinical perfectionism can decrease unhelpful perfectionism, as well as anxiety, depression and eating concerns. Even so, this does not guarantee that you will benefit from this treatment.

Potential risks of this research: It is possible that during the interview or group sessions, a question or discussion may lead you to feel slight discomfort or embarrassment. However, you are able to withdraw at any time from the study. In addition, you can always discuss any concerns with me on 9266 3436, my supervisor Dr. Sarah Egan on 9266 2367 or my other supervisor Associate Professor Clare Rees on 9266 3442. You will be given numbers of additional treatment places if needed.

Medications: If you are currently taking anti-depressants, you will need to be stable on your medication for one month before taking part in this study. I also ask that you agree not to stop your current medication or change the type or dose of your medication until after your final interview six months after the group treatment.

Other Psychological Treatments I ask that you do not have other forms of psychological treatment (e.g., go to sessions with another psychologist) from the time of your first interview for this study, until the final interview six months after the group treatment. If during this time, you feel distressed and feel that it is important for you to receive treatment straight away, you will be able to have six extra psychology sessions with a clinical psychologist trainee at the Curtin University Psychology and Speech Clinic. The clinical psychologist trainee delivering these six extra sessions will not be involved in the research project. Alternatively if you wish to have other psychological treatment, you are able to withdraw from the study. In this case you can still receive the perfectionism treatment or I can refer you for treatment elsewhere.

Confidentiality: All information collected will remain confidential to those outside the study. The information will be stored for five years in a locked cupboard at the Curtin University Psychology and Speech Clinic. The data from each person will be given a three digit code before it is entered into the computer. If the study is published, you will not be identified. To ensure that myself and the other psychologist running the group are providing high quality treatment, all psychology sessions will be recorded on DVD, and small parts of these sessions will be viewed only by me, the other psychologist running the group, Dr. Sarah Egan, Associate Professor Clare Rees and Dr. Fiona Michel. These DVDs will be stored for 5 years

in a locked cupboard in the Curtin University Psychology and Speech Clinic and then will be destroyed.

Further information: Please keep this information sheet. If you have any questions or would like more information, you can contact me at the Curtin University Psychology and Speech Clinic on (08) 9266 3436, or via email at alicia.handley@postgrad.curtin.edu.au Alternatively, you can contact my supervisor Associate Professor Clare Rees on (08) 9266 3442 or via email at c.rees@curtin.edu.au or my other supervisor Dr. Sarah Egan on (08) 9266 2367 or via email at s.egan@curtin.edu.au

*This study has been approved by the Curtin University Human Research Ethics Committee (Approval Number **HR75/2011**). The Committee is comprised of members of the public, academics, lawyers, doctors and pastoral carers. Its main role is to protect participants. If needed, verification of approval can be obtained either by writing to the Curtin University Human Research Ethics Committee, c/- Office of Research and Development, Curtin University, GPO Box U1987, Perth, 6845, or by telephoning 9266 2784, or by emailing hrec@curtin.edu.au.*

APPENDIX D:

PARTICIPANT CONSENT FORM

Consent form
Please return this page to the therapist

I _____,

have read the information sheet and voluntarily consent to participate in this research.

- I understand that the purpose of this research is to trial a perfectionism treatment and that there is a chance I may not benefit from this treatment.

- I understand that I will be randomly allocated to either receive the perfectionism treatment straight away or wait eight weeks and then receive the perfectionism treatment.

- If I am currently on anti-depressants, I agree that I have been on a stable dose of this medication for the past month. I also agree that I will not stop my current anti-depressants or change the type or dose of my anti-depressants from the time of my first interview with Alicia until my interview six months after the group treatment.

- I agree that I will not have other forms of psychological treatment from the time of my first interview with Alicia until the final interview six months after the group treatment. I understand that during this time, if I am distressed and feel that it is important to receive treatment straight away, I will be able to have six extra psychology sessions with a clinical psychologist trainee at the Curtin University Psychology and Speech Clinic. The clinical psychologist trainee delivering these six extra sessions will not be involved in the research project. I also understand that if I want to have other psychological treatment during the study, I can withdraw from the study.

- I understand that my personal information will remain confidential from people outside of the study. I understand that it will be stored for 5 years in a locked cupboard in the Curtin University Psychology and Speech Clinic. I realise that if the research is published, I will not be identified.

- I understand that each psychology session will be recorded on DVD and that these DVDs will be stored for five years in a locked cupboard in the Curtin University Psychology and Speech Clinic.

- I understand that my participation in this research is voluntary, and that I can withdraw from this study at any time without negative consequences. I understand that if I withdraw from this study I can still receive treatment at the Curtin University Psychology and Speech Clinic, or I can be referred to another place for treatment.

SIGNED_____
NAME _____DATE _____

APPENDIX E:
PARTICIPANT VIDEO CONSENT FORM
Curtin University of Technology
School of Psychology
Adult Psychology Clinic

VIDEO CONSENT FORM

INFORMATION FOR THE CLIENT:

1. All video tape recordings of any consultation are part of your confidential psychological record and as such are securely stored.

2. Sessions are recorded for the purpose of supervising our clinic staff undertaking post-graduate training in clinical psychology.

3. Supervision may be both on an individual basis or involve a group of trainees who may also view the tape.

4. All staff are bound by the professional code of ethics

5. The video tape allows the consultant to gain feedback about their approach with the view to ensuring that the service you receive is of high standard

6. The video recording is erased once the supervision process has been completed. The tape is not intended as a permanent record.

CLIENT CONSENT TO VIDEO TAPE CONSULTATIONS:

I have read and understand the above information.
I hereby consent to have video recordings made of my consultations, on the above conditions.

_____
Client name (in block letters)

_____ _____
Client signature Date

_____ _____
Clinical Psychology Trainee's Signature Date

APPENDIX F:

PERFECTIONISM QUESTIONS ASKED IN ASSESSMENTS

1) How does your perfectionism affect your day-to-day life?

2) What are the types of situations in which it is really important for you to reach your standards?

3) What are the consequences if you feel you don't reach your standards?

4) Does it affect the way that you feel about yourself?

5) Can you please give me a recent example in detail about a time where you set standards for yourself, didn't meet them and how you responded to this?

Adapted from Steele et al. (2013)

APPENDIX G:
SESSION CHECKLIST TO ASSESS THERAPIST ADHERENCE TO SHAFRAN, EGAN, AND WADE'S (2010) TREATMENT PROTOCOL

THERAPIST ADHERENCE ITEMS: SESSION 1

Session 1: Understanding perfectionism, the first steps and the costs of changing

Aims:

- To welcome participants to the group and provide an overview of the program.
- To provide psycho-education on perfectionism, the problems that co-occur with perfectionism, the causes of perfectionism and how it is maintained.
- For participants to construct a diagram of what maintains their perfectionism
- To explore the pros and cons of changing perfectionism.

Session objectives	Did not cover			Partly covered			Completely covered
Welcome to the group • Therapists to welcome participants to group, go through housekeeping (toilets, session time and duration, maximum number of sessions missed). Therapists to engage group members in an ice-breaker activity.	1	2	3	4	5	6	7
Overview of the group program • Therapist to provide an overview of the group program (where treatment material is derived from, structure of group sessions, and participant contribution). Therapists to work with participants to develop group rules.	1	2	3	4	5	6	7
Psycho-education about what perfectionism is • Therapist to define perfectionism by referring to three main features (setting demanding standards and self-criticism, striving even when there are negative consequences, self-worth being overly reliant on meeting standards in specific areas).	1	2	3	4	5	6	7
Psycho-education about the problems that co-occur with perfectionism • Therapist to provide psycho-education about the problems that co-occur with	1	2	3	4	5	6	7

perfectionism. This includes the problems perfectionism causes in its own right, as well as anxiety disorders (social phobia, obsessive-compulsive disorder), obsessive-compulsive personality disorder, depression and eating disorders.	
Psycho-education about the causes of perfectionism • Therapist to provide information about the causes of perfectionism and to highlight that successful treatment for perfectionism does not focus on the causes of perfectionism but focuses on what maintains it.	1 2 3 4 5 6 7
Psycho-education about the maintenance of perfectionism • Therapist to provide information about the maintenance cycle of perfectionism with reference to the following factors: self-esteem, high standards and rigid rules, cognitive biases, performance-related behaviour, high likelihood of perceived failure and self-criticism, avoidance of meeting standards, temporarily attaining standards and discounting success.	1 2 3 4 5 6 7
Diagram about the maintenance of perfectionism • Therapist to read out the example of 'John' and participants to look at John's diagram of perfectionism. Therapist to highlight that the goal of perfectionism treatment is not to eliminate striving for standards, but to reduce self-esteem being overly reliant on achievement and striving and to decrease self-criticism. Therapist to give an example of two musicians.	1 2 3 4 5 6 7
• Participants to start filling in their own diagram of how their perfectionism is maintained.	1 2 3 4 5 6 7
Pros and cons of changing perfectionism • Therapist to normalise feelings of uncertainty about changing perfectionism. Therapist to collaboratively explore with participants the pros and cons of changing perfectionism and not changing perfectionism.	1 2 3 4 5 6 7

Assign homework • Therapist to assign homework, highlighting that there is no right or wrong way to do homework.	1 2 3 4 5 6 7
COMMENTS:	

Signature of rater:_____

Date:_____

THERAPIST ADHERENCE ITEMS: SESSION 2

Session 2: Identifying problem areas and psycho-education

Aims:

- To identify problem areas of perfectionism
- To introduce self-monitoring of perfectionism
- To discuss common behaviours associated with perfectionism
- To provide information about what is fact and what is fiction in regard to perfectionism.

Session objectives	Did not cover			Partly covered			Completely covered
Homework review • Therapist to check in with clients about their homework.	1	2	3	4	5	6	7
Identifying areas in life where perfectionism is a problem • Therapist to read out Box 7.1.1 *Example areas of perfectionism and typical thoughts and behaviours.*	1	2	3	4	5	6	7
• Participants to complete Worksheet 7.1.1 *Which areas of perfectionism apply to me?*	1	2	3	4	5	6	7
Self-monitoring of perfectionism • Therapist to introduce self-monitoring with a focus on why it is important to self-monitor perfectionism, tips for self-monitoring and overcoming obstacles to self-monitoring.	1	2	3	4	5	6	7
Common behaviours related to perfectionism • Therapist to define and discuss behaviours commonly related to perfectionism (avoidance, procrastination, performance checking, and other counter-productive behaviours) and provide examples of these behaviours.	1	2	3	4	5	6	7
• Participants to be introduced to Worksheet 7.1.3 *Monitoring Record of Perfectionism Thoughts, Emotions and Behaviours*.	1	2	3	4	5	6	7
Provide information about fact versus fiction regarding perfectionism • Therapist to introduce fact versus fiction, emphasising the importance of discovering	1	2	3	4	5	6	7

how much of one's beliefs are fact and how much are fiction in regard to perfectionism. Therapist to read out 'Bernie' example.	
• Therapist to discuss the belief 'the harder you work the better you will do', including discussing the factors affecting achievement, and the U-shaped relationship between stress/arousal and performance (Yerkes-Dodson Law, 1908). Therapist to read out 'Soo-Lee' example.	1 2 3 4 5 6 7
• Therapist to briefly discuss nine statements to differentiate fact from fiction in regard to perfectionism.	1 2 3 4 5 6 7
Assign homework • Therapist to assign homework.	1 2 3 4 5 6 7
COMMENTS:	

Signature of rater:_____

Date:_____

THERAPIST ADHERENCE ITEMS: SESSION 3

Session 3: Behavioural surveys and behavioural experiments

Aim

- To provide awareness into the use of behavioural strategies for challenging perfectionism

Session objectives	Did not cover		Partly covered				Completely covered
Homework review • Therapist to check in with clients about their homework	1	2	3	4	5	6	7
Behavioural strategies for challenging perfectionism • Therapist to provide rationale for conducting surveys for perfectionism and define surveys for perfectionism. Therapist to read out example of 'Hannah'	1	2	3	4	5	6	7
• Therapist to discuss overcoming obstacles to conducting a survey (i.e., social isolation and finding it hard to construct the survey). Therapist to emphasise that surveys for perfectionism usually entail asking how frequently one engages in a behaviour or the time spent on a task. Therapist to read out Box 7.3.1 *Examples of Survey Questions.*	1	2	3	4	5	6	7
• Therapist to read out Box 7.3.2 *What beliefs can be tested by surveys, whom to ask and what to ask them,* to provide examples of the types of beliefs that can be tested and how to test them.	1	2	3	4	5	6	7
• Participants to look at Worksheet 7.1.1 *Which areas of perfectionism apply to me?* from previous week that focused on thoughts for a perfectionism area and derive survey questions to test these thoughts.	1	2	3	4	5	6	7
• Therapist to discuss how to interpret survey responses, with an emphasis on three outcomes: survey responses being a reality check, assisting to identify all or nothing thinking and providing a basis for behavioural experiments.	1	2	3	4	5	6	7

• Therapist to introduce behavioural experiments, emphasising that the goal of a behavioural experiment is to test one's belief about a specific action or behaviour. Therapist to provide examples of behavioural experiments. Therapist to describe the behavioural experiment 'Jeff' conducted.	1 2 3 4 5 6 7
• Therapist to briefly discuss how behavioural experiments can have different forms and then take participants through a completed example of a behavioural experiment in Box 7.4.1 *An example of a behavioural experiment.*	1 2 3 4 5 6 7
• Participants asked to devise their own behavioural experiment by working through the steps in Worksheet 7.4.1 *Behavioural Experiment*	1 2 3 4 5 6 7
Assign homework • Therapist to assign homework.	1 2 3 4 5 6 7
COMMENTS:	

Signature of rater:_____

Date:_____

THERAPIST ADHERENCE ITEMS: SESSION 4

Session 4: From all or nothing thinking to flexibility and freedom

Aim:

- To investigate all or nothing thinking

Session objectives	Did not cover			Partly covered			Completely covered
Homework review • Therapist to check in with clients about their homework	1	2	3	4	5	6	7
Investigating all or nothing thinking • Therapist to introduce participants to 'all or nothing thinking' by defining it and describing how it maintains perfectionism. Therapist to read out examples of all or nothing thinking from Box 7.5.1	1	2	3	4	5	6	7
• Therapist to read out Box 7.5.3 which details the behavioural experiment conducted by 'Tony' to challenge his all or nothing thinking.	1	2	3	4	5	6	7
• Participants asked to fill in Worksheet 7.5.1 *Testing all or nothing beliefs with a behavioural experiment.*	1	2	3	4	5	6	7
• Therapist to introduce participants to the continuum approach. This involves defining this approach and referring to the example of 'Ifioma' to explain how to use the four-step procedure to challenge all or nothing thinking about work and eating.	1	2	3	4	5	6	7
• Participants asked to fill in Worksheet 7.5.2 *Testing all or nothing thinking with continuums*	1	2	3	4	5	6	7
• Therapist to introduce participants to the idea of replacing rules with guidelines. This involves discussing how rigid rule setting is problematic, giving an example of a rule and a guideline, and asking participants to make their own list of rules for living.	1	2	3	4	5	6	7
• Therapist to discuss behavioural experiments aimed at doing things less than perfectly, with reference to 'Maggie' in Box 7.5.6. Therapist to	1	2	3	4	5	6	7

discuss behavioural experiments aimed at reducing the amount of time spent on a task, with reference to 'Suzie' in Box 7.5.7	
• Therapist to discuss the idea of accepting less than perfect performance, with a description of 'Chloe'.	1 2 3 4 5 6 7
Assign homework • Therapist to assign homework.	1 2 3 4 5 6 7
COMMENTS:	

Signature of rater:_____

Date:_____

THERAPIST ADHERENCE ITEMS: SESSION 5

Session 5: Learning to notice the positive and changing thinking styles

Aim

- To challenge the cognitive distortions that commonly occur in perfectionism

Session objectives	Did not cover			Partly covered			Completely covered
Homework review • Therapist to check in with clients about their homework	1	2	3	4	5	6	7
Focussing on the negative aspects of performance • Therapist to introduce the cognitive distortion 'noticing the negative aspects of performance', by describing it and discussing 'Aimee'.	1	2	3	4	5	6	7
• Therapist to read out Box 7.6.1 *Examples of 'noticing the negative' in different areas of perfectionism.*	1	2	3	4	5	6	7
• Therapist to read through Box 7.6.2: *Aimee's worksheet: noticing the negative and broadening attention*. Participants asked to fill in Worksheet 7.6.1 *Noticing the negative and broadening aspects of attention*. Therapist to highlight the importance of participants broadening attention at the time they notice negative thoughts.	1	2	3	4	5	6	7
Discounting the positive • Therapist to describe the cognitive distortion 'discounting the positive'. Therapist to introduce participants to the strategy of completing a diary in which they record positive aspects of performance and the absence of negative aspects of performance, which participants will complete for homework.	1	2	3	4	5	6	7
• Therapist to discuss the impact of thoughts on feelings and behaviour. Therapist to discuss three other cognitive distortions associated with perfectionism: double-standards, over-generalising and should statements.	1	2	3	4	5	6	7
• Therapist to briefly describe six other cognitive distortions: catastrophising, emotional reasoning, labelling, personalisation, mind-reading and	1	2	3	4	5	6	7

predictive thinking.	
• Therapist to define 'cognitive restructuring' and define 'thoughts' and 'feelings'. Therapist to briefly describe thought diaries as a technique to challenge unhelpful thoughts and construct rational thoughts. Therapist to go through Boxes 7.7.3 and 7.7.4, which describe the five steps of a thought diary and detail how 'Aimee' completed a thought diary.	1 2 3 4 5 6 7
• Therapist and group members to assist a volunteer from the group to challenge his/her thoughts on the whiteboard using the five steps of the thought diary. Therapist to highlight how completing a thought diary can be hard at first but becomes easier with practice.	1 2 3 4 5 6 7
Assign homework • Therapist to assign homework.	1 2 3 4 5 6 7
COMMENTS:	

Signature of rater:_____

Date:_____

THERAPIST ADHERENCE ITEMS: SESSION 6

Session 6: Procrastination, problem-solving, time management, pleasant events and putting it all together

Aims:

- To highlight the relationship between procrastination and perfectionism and provide strategies to reduce procrastination.
- To develop problem solving strategies
- To develop time management strategies
- To explore the importance of pleasant events.

Session objectives	Did not cover			Partly covered			Completely covered
Homework review • Therapist to check in with clients about their homework	1	2	3	4	5	6	7
Procrastination • Therapist to define procrastination and ask participants to complete Worksheet 7.8.1 *In which areas of my life do I procrastinate in?*	1	2	3	4	5	6	7
• Therapist to read through Box 7.8.1 *Rob's self-monitoring of procrastination* to explain how to self-monitor procrastination.	1	2	3	4	5	6	7
• Therapist to discuss the maintenance cycle of procrastination and perfectionism with reference to how procrastination enhances one's belief in perfectionist predictions and how procrastination maintains self-evaluation being excessively reliant on achievement. Therapist to briefly introduce the idea of considering the costs and benefits of procrastination, with an example of procrastination and its impact on anxiety.	1	2	3	4	5	6	7
Strategies to reduce procrastination • Therapist to discuss thought diaries and behavioural experiments as strategies for procrastination. Therapist to read out Box 7.8.4 *Gemma's thought diary to challenge procrastination.* Therapist and group members to help a volunteer from the group use the thought diary steps to challenge thoughts on the whiteboard. Therapist to read out Box 7.8.3 *Gemma's behavioural experiment to overcome procrastination.* Therapist and group members to help the volunteer devise a behavioural	1	2	3	4	5	6	7

experiment to reduce procrastination.	
• Therapist to discuss coping statements and flashcards, the 'just do it' approach and the strategy of changing one's image of coping.	1 2 3 4 5 6 7
Additional strategies for procrastination and problem-solving. • Therapist to discuss dividing tasks into a series of manageable chunks, the strategy of 'action comes before motivation' and using a problem-solving approach to reduce procrastination. Therapist to read out Box 7.8.8 *Problem-solving: the example of Aimee* to explain the six steps of the problem-solving approach.	1 2 3 4 5 6 7
Time management strategies • Therapist to discuss time management schedules with reference to 'Aimee'. Participants asked to construct a time-management schedule using Worksheet *7.8.11 Time management schedule.*	1 2 3 4 5 6 7
Pleasant event scheduling • Therapist to discuss pleasant event scheduling. Participants to look at Worksheet *7.8.12 List of pleasant events and activities* and asked to schedule in one pleasant activity to complete this week. Therapist to briefly discuss how all of the strategies covered in the perfectionism sessions can be employed to better determine one's reality.	1 2 3 4 5 6 7
Assign homework • Therapist to assign homework.	1 2 3 4 5 6 7
COMMENTS:	

Signature of rater:_____

Date:_____

THERAPIST ADHERENCE ITEMS: SESSION 7

Session 7: Self-criticism and compassion

Aim:

- To provide strategies to reduce self-criticism and increase self-compassion.

Session objectives	Did not cover		Partly covered			Completely covered	
Homework review • Therapist to check in with clients about their homework	1	2	3	4	5	6	7
Self-criticism and strategies to reduce it • Therapist to define self-criticism and state why it can be destructive. Participants asked to read Box 8.1 *Am I self-critical?* Therapist to provide a brief explanation as to the potential reasons why individuals are self-critical.	1	2	3	4	5	6	7
• Therapist to read out Box 8.2 *Which coach would you choose?* Therapist to discuss the negative effects of self-criticism and question participants as to which coach they would prefer. Therapist to highlight that the goal is not to eliminate self-criticism but to reduce self-criticism and increase self-compassion.	1	2	3	4	5	6	7
• Therapist to introduce participants to the first of three steps to reduce self-criticism: 'Identifying the critical voice'. Therapist to explain Worksheet 8.1 *Diary to help identify the self-critical thoughts* and refer to example 'Gemma'. Participants to start Worksheet 8.1 and finish the rest for homework.	1	2	3	4	5	6	7
• Therapist to introduce the second step for reducing self-criticism: 'Identifying the compassionate voice'. Participants to look at Worksheet 8.2 *What values are important to you in your friendships?* and encouraged to brainstorm more factors. Therapist to ask participants whether they apply any of the above values to themselves. Participants to complete Worksheet 8.3 *What values do you apply to yourself?*	1	2	3	4	5	6	7
• Therapist to explain Worksheet 8.4 *Diary to help identify the compassionate thoughts.* Participants asked to start Worksheet 8.4.	1	2	3	4	5	6	7

• Therapist to introduce the third step for reducing self-criticism: 'How to react to the critical voice when it starts speaking'. Therapist to discuss the first of two strategies for reacting to the critical voice: writing compassionate voice responses on index cards. Participants to look at examples of compassionate voice responses on page 233.	1 2 3 4 5 6 7
• Therapist to discuss the second of two strategies for reacting to the critical voice: the acceptance technique.	1 2 3 4 5 6 7
• Therapist to highlight that at some points in life the self-critical voice may become louder at times and briefly discuss how to handle this.	1 2 3 4 5 6 7
Assign homework • Therapist to assign homework.	1 2 3 4 5 6 7
COMMENTS:	

Signature of rater:_____

Date:_____

THERAPIST ADHERENCE ITEMS: SESSION 8

Session 8: Self-evaluation and freedom

Aims:

- To weaken the link between participants' self-evaluation and their achievements, and assist in developing new ways to evaluate themselves.
- To assist participants in planning ahead, including setting goals, developing action plans and developing strategies to manage setbacks.

Session objectives	Did not cover		Partly covered				Completely covered
Homework review • Therapist to check in with clients about their homework	1	2	3	4	5	6	7
Weakening the link between self-evaluation and achievement • Therapist to discuss how in clinical perfectionism, self-worth is excessively reliant on meeting standards in specific areas. Therapist to discuss the multiple disadvantages of this with tips on how to weaken this link.	1	2	3	4	5	6	7
• Therapist to introduce participants to the idea of hot spots for self-evaluation, which are life areas that make one feel very good/very bad when they are going well/poorly. Therapist to refer participants to Box 9.1 *Stephen's diary to help identify the areas of life he uses to evaluate himself.* Therapist to highlight that Stephen has discounted certain areas of his life and only two areas greatly influence his self-evaluation.	1	2	3	4	5	6	7
• Therapist to explain Worksheet 9.1 *Diary to help identify the areas of your life that you currently use to evaluate yourself.* Participants to complete worksheet with one or two examples and devise an if-then statement relating achievement in specific areas to self-evaluation.	1	2	3	4	5	6	7
Developing new ways of self-evaluation (independent from achievement), including goal setting. • Therapist to encourage participants to reflect on times in their life congruent with the perspective 'even when I don't achieve the standards I set	1	2	3	4	5	6	7

myself, it doesn't make me any less worthwhile as a person' and consider what makes them worthwhile apart from meeting their standards. Therapist to discuss the setting of flexible and realistic goals using 'Stephen' as an example.	
• Participants to look at Worksheet 9.3 *Expanding my self-evaluation across different life areas* and asked to select four life areas different to those previously selected at the start of the course. Participants to start making short-term goals in two of these new areas using Worksheet 9.4 *Goals to work on for the next six months that will expand the areas of my life that contribute to my self-worth.*	1 2 3 4 5 6 7
• Therapist to encourage participants to retrain their attention to focus on what they have achieved using the daily log of achievements. Therapists to refer to Box 9.3 *Stephen's daily log of achievements* as an example.	1 2 3 4 5 6 7
Developing an action plan • Therapist to highlight that the amount of change experienced differs with different people and emphasise that small changes are important. Participants encouraged to see treatment as part of an ongoing process. Participants encouraged to re-visit the book and exercises in their own time and write short summaries of helpful strategies. Therapist to emphasise the importance of having realistic and compassionate expectations.	1 2 3 4 5 6 7
Dealing with setbacks/relapse prevention • Therapist to discuss how to deal with potential set-backs so as to prevent relapses.	1 2 3 4 5 6 7
Assign homework • Therapist to assign homework for participants to do in their own time.	1 2 3 4 5 6 7
COMMENTS:	

Signature of rater:_____

Date:_____

APPENDIX H:
MEASURE ASSESSING ADHERENCE TO RESTRICTIONS OF MEDICATION CHANGE AND EXTERNAL PSYCHOTHERAPY

Are you <u>currently</u> receiving any form of treatment for your perfectionism? (apart from participating in this group treatment for clinical perfectionism) ❒ **Yes** ❒ **No**

IF YES, what type of treatment are you receiving (e.g., psychological intervention, medication, other)?

For how long have you been receiving this treatment?

_____

_____

Has there been <u>another time</u> over the past 8 weeks where you have received any form of treatment for your perfectionism? (apart from participating in this group treatment for clinical perfectionism) ❒ **Yes** ❒ **No**

IF YES, what type of treatment did you receive (e.g., psychological intervention, medication, other)?

For how long did you receive this treatment?

_____

_____

Are you currently receiving any form of treatment for your anxiety/depression/eating concerns or other concerns? (apart from participating in this group treatment for clinical perfectionism) ❒ **Yes** ❒ **No**

IF YES, what type of treatment did you receive (e.g., psychological intervention, medication, other)?

For how long did you receive this treatment?

_____

_____

Has there been <u>another time</u> over the past 8 weeks where you have received any form of treatment for your anxiety/depression/eating concerns or other concerns? (apart from participating in this group treatment for clinical perfectionism) ❒ **Yes** ❒ **No**

IF YES, what type of treatment did you receive (e.g., psychological intervention, medication, other)?

For how long did you receive this treatment?

_____

_____

Is there anything else that you think is important for me to know? ❒ **Yes** ❒ **No**

IF YES please record below:

_____

_____

APPENDIX I:

MEASURE ASSESSING REVISION OF TREATMENT OVER FOLLOW-UP PERIODS

Over the past 3 months, have you read any sections of the readings? ❒ Yes ❒ No

IF YES what sections were read? How much time was spent reading them?

_____
_____
_____
_____
_____
_____

Over the past 3 months, have you reviewed any of the worksheets or practiced any of the exercises? ❒ Yes ❒ No

IF YES, what worksheets were reviewed? How much time was spent reviewing them? What exercises were practiced? How much time was spent practicing them?

_____
_____
_____
_____
_____
_____

Over the past 3 months, have you used any of the strategies that you learnt in the perfectionism group? ❒ Yes ❒ No

IF YES, please list the strategies that you have used:

_____
_____
_____
_____
_____

IF YES, which strategies did you find the <u>most useful</u> during the past 3 months? Please order these strategies below, with 1 = most useful strategy, 2 = second most useful strategy etc.

_____
_____
_____
_____